HITACHI

PA **No. 0123**

53SDX89BA
60SDX88BA

SERVICE MANUAL

NTSC DP86V Chassis

R/C: CLU-615MP

This addendum includes all information necessary for the 53SDX89BA/60SDX88BA, EXCEPT information which is the same as the 53SDX89B/60SDX88B. For information not included in this manual, please refer to the 53SDX89B Service Manual PA No. 0122 and 60SDX88B Service Manual PA No. 0113. This addendum only includes Circuit Schematics, PWB films, and Parts List that are different between the 53SDX89B/60SDX88B and 53SDX89BA/60SDX88BA. These differences are due to an additional V-Chip feature which required modification to the Signal PWB, Deflection PWB, and Terminal PWB.

CONTENTS

SAFETY PRECAUTIONS 2
TECHNICAL CAUTIONS 10
SPECIFICATIONS 11
CIRCUIT PROTECTION 11
CAUTIONS WHEN CONNECTING/DISCONNECTING THE HV CONNECTOR 12
REMOTE CONTROL 13
ADJUSTMENTS PROCEDURE 14
SCHEMATICS 29
PRINTED CIRCUIT BOARDS 38
REPLACEMENT PARTS LIST 41
QUICK REFERENCE PARTS LIST 59

CAUTION: Before servicing this chassis, it is important that the service technician read the “Safety Precaution” and “Product Safety Notices” in this service manual.

SAFETY NOTICE
USE ISOLATION TRANSFORMER WHEN SERVICING

Components having special safety characteristics are identified by a ⚠ on the schematics and on the parts list in this Service Data and its supplements and bulletins. Before servicing the chassis, it is important that the service technician read and follow the “Safety Precautions” and “Product Safety Notices” in this Service Manual.

*For continued x-radiation protection, replace picture tube with original type or Hitachi approved equivalent type.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

PROJECTION COLOR TELEVISION

SEPTEMBER 1999 **HHEA-MANUFACTURING**

SAFETY NOTICE
USE ISOLATION TRANSFORMER WHEN SERVICING

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For continued X-Radiation protection, replace picture tube with original type or Hitachi approved equivalent type.

This Service Manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health and Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with solder. Also, when soldering do not inhale any smoke or fumes produced.

This television receiver provides display of television closed captioning in accordance with section 15.119 of the FCC rules.

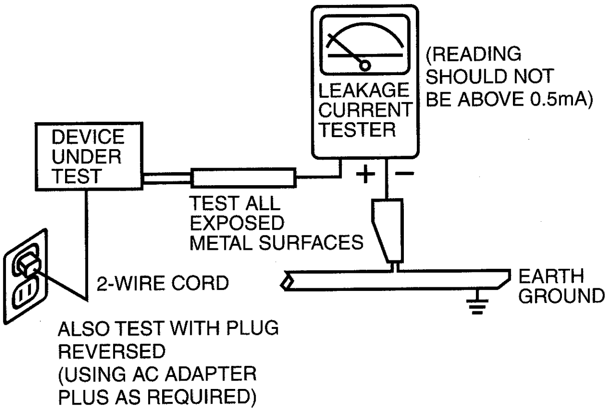
SAFETY PRECAUTIONS

1. Before returning an instrument to the customer, always make a safety check of the entire instrument, including but not limited to the following items.
   a. Be sure that no built-in protective devices are defective and/or have been deleted during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including but not limited to, nonmetallic control knobs, insulating fishpaper, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**

   b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to (1) spacing between the picture tube and cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.

   c. **Antenna Cold Check** – With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input, exposed terminal screw and, if applicable, to the coaxial connector. If the measured resistance is less than 1.0 megohms or greater than 5.2 megohms, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.

   d. **Leakage Current Hot Check** – With the instrument completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.0 Leakage Current for Appliances and Underwriters Laboratories (UL) 1410, (50.7). With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal waterpipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle bracket, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milliamps. Reverse the instrument power cord plug in the outlet and repeat test.


LEAKAGE CURRENT TESTER
(READING SHOULD NOT BE ABOVE 0.5mA)
DEVICE UNDER TEST
+
−
TEST ALL EXPOSED METAL SURFACES
2-WIRE CORD
EARTH GROUND
ALSO TEST WITH PLUG REVERSED (USING AC ADAPTER PLUS AS REQUIRED)

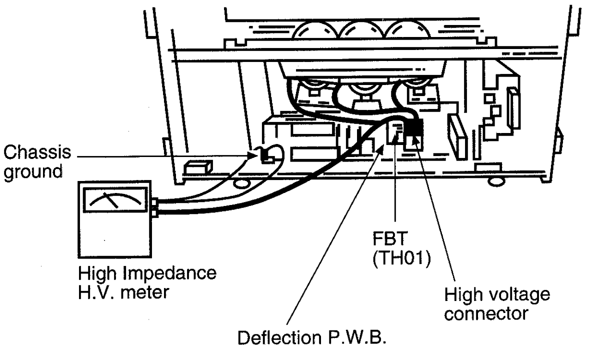
AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSORIES.

   e. **High Voltage –** This receiver is provided with a hold down circuit for clearly indicating that voltage has increased in excess of a predetermined value. Comply will all notes described in this Service Manual regarding this hold down circuit when servicing, so that this hold down circuit may correctly be operated.

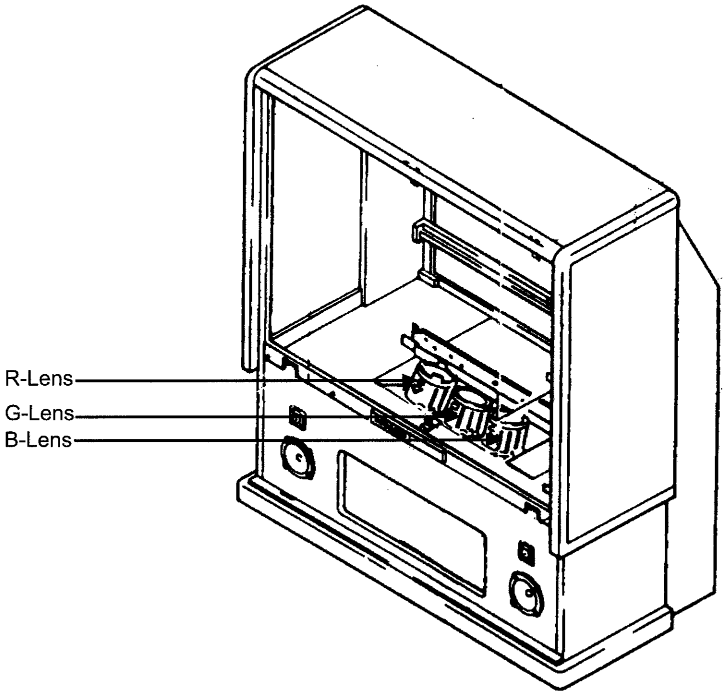
   f. **Service Warning –** With maximum contrast, operating high voltage in this receiver is lower than **33.0 kV.** In case any component having influence on high voltage is replaced, confirm that the high voltage with maximum contrast is lower than **33.0 kV.**
   To measure H.V. use a high impedance H.V. meter. Connect (-) to chassis earth and (+) to the CRT anode button. (See the following connection diagram.)

   Note: Turn power switch off without fail before the connection to the anode button is made.



g. **X-radiation – TUBE:** The primary source of X-radiation in this receiver is the picture tube. The tube utilized for the above mentioned function in this chassis is specially constructed to limit X-radiation emissions.
For continued X-radiation protection, the replacement tube must be the same type as the original, Hitachi approved type.
When troubleshooting and making test measurements in a receiver with a problem of excessive high voltage, avoid being unnecessarily close to the picture tube and the high voltage component.
Do not operate the chassis longer than is necessary to locate the cause of excessive voltage.

h. **X-radiation Shield –**
   1. This receiver is provided with X-ray shield plates for protection against X-radiation. Do not remove X-ray shield plates A, B, C, or D shown in Fig. 1 unnecessarily, when troubleshooting and/or making test measurements.
   2. To prevent X-radiation, after replacement of picture tube and lens, confirm these components to be fixed correctly to bracket and cabinet, and not to be taken off easily.



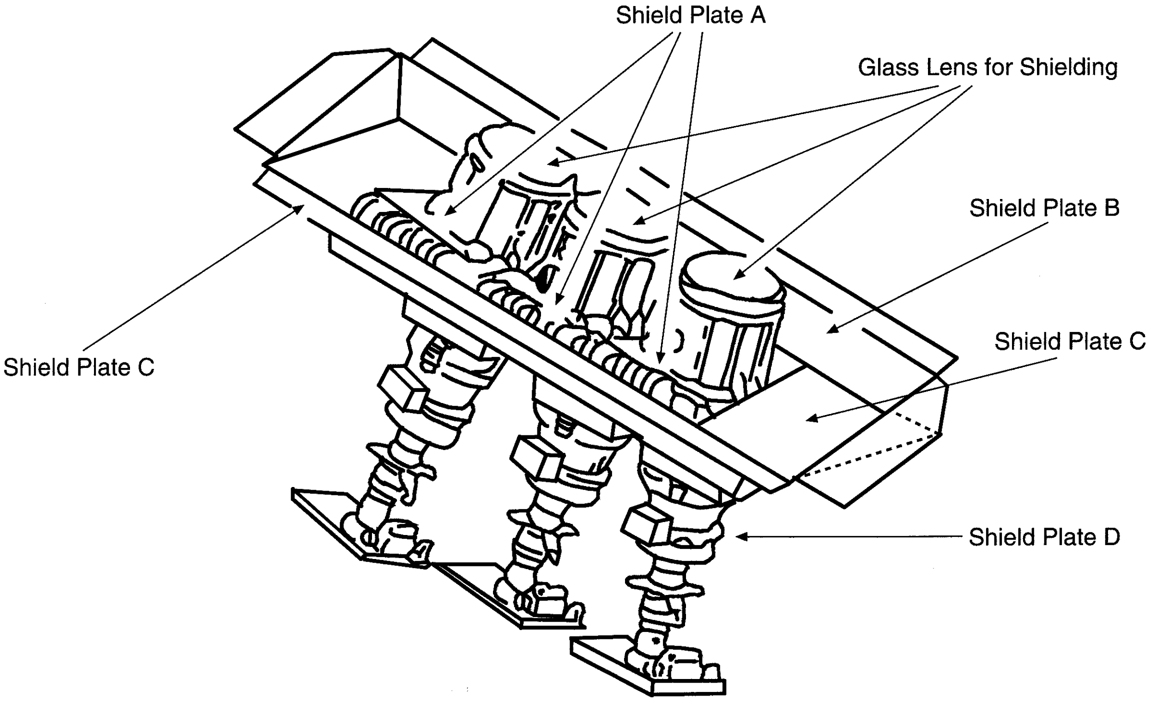


Fig. 1. Detailing X-radiation Shield

2. Read and comply with all caution and safety-related notes on or inside the receiver cabinet, on the receiver chassis, or on the picture tube.

3. **Design Alteration Warning** – Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions including but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connectors, might alter the safety characteristics of this receiver and create a hazard to the user. Any design alterations or additions may void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.

4. **Picture Tube Implosion Protection Warning** – The picture tube in this receiver employs integral implosion protection. For continued implosion protection, replace the picture tube only with one of the same type number. Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck.

5. **Hot Chassis Warning** – **a.** Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord and may be safely serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. Confirm that the AC power plug is inserted correctly with an AC voltmeter by measuring between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground. **b.** Some TV receiver chassis normally have 85V AC (RMS) between chassis and earth ground regardless of the AC plug polarity. These chassis can be safely serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection. c. Some TV receiver chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulating material that must not be defeated or altered.

6. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: **a.** near sharp edges, **b.** near thermally hot parts – be sure that leads and components do not touch thermally hot parts, **c.** the AC supply, **d.** high voltage and **e.** antenna wiring. Always inspect in all areas for pinched, out-of-plate, or frayed wiring. Do not change spacing between components and the printed circuit board. Check AC power cord for damage.

7. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

8. **PRODUCT SAFETY NOTICE** – Many TV electrical and mechanical parts have special safety-related characteristics some of which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified in Hitachi service data by shading on schematics and by a ⚠ in the parts list. Use of substitute replacement that does not have the same safety characteristics as the recommended replacement part in Hitachi service data parts list might create shock, fire, and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate. For the latest information, always consult the appropriate current Hitachi service literature. A subscription to, or additional copies of service literature may be obtained at a nominal charge from Hitachi.

SERVICING PRECAUTIONS

CAUTION: Before servicing instruments covered by this service data and its supplements and addenda, read and follow the SAFETY PRECAUTIONS on page 3 of this publication.

NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

General Servicing Guidelines

1. Always unplug the instrument AC power cord from the AC power source before:
   a. Removing or reinstalling any component, circuit board, module, or any other instrument assembly.

   b. Disconnecting or reconnecting any instrument electrical plug or other electrical connection.

   c. Connecting a test substitute in parallel with an electrolytic capacitor in the instrument.
   CAUTION: A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

   d. Discharging the picture tube anode.

2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc.) equipped with a suitable high voltage probe. Do not test high voltage by "drawing an arc." The H.V. Distribution Box has an internal 400MΩ resistor (bleeder resistor) connected from the high voltage to ground. After power is removed from the instrument the high voltage will discharge through the high voltage bleeder resistor. If the tubes have high voltage after power is removed, then the bleeder resistor is defective or the bleeder ground is disconnected.

3. Discharge the picture tube's anode at any of the R, G, or B outputs on the H.V. Distribution Box only by (a) first connecting one end of an insulated clip lead to the degaussing or kine aquadag grounding system shield at the point where the picture tube socket ground lead is connected, and then (b) touch the other end of the insulated clip lead to the picture tube high voltage distribution box R, G, or B output, using an insulated handle to avoid personal contact with high voltage.

4. Do not spray chemicals on or near this instrument or any of its assemblies.

5. Unless specified otherwise in these service data, clean electrical contracts by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable nonabrasive applicator: 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength).
   CAUTION: This is a flammable mixture. Unless specified otherwise in these service data, lubrication of contacts is not required.

6. Do not defeat any plug/socket B+ voltage interlocks with which instruments covered by this service data might be equipped.

7. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat-sinks are correctly installed.

8. Always connect the test instrument ground lead to the appropriate instrument chassis ground before connecting the test instrument positive lead. Always remove the test instrument ground lead last.

9. Use with this instrument only the test fixtures specified in this service data.
   CAUTION: Do not connect the test fixture ground strap to any heatsink in this instrument.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or desolder ES devices.

4. Use only can anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES device.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material.)

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range 500°F to 600°F.

2. Use an appropriate gauge of resin-core solder composed of 60 parts tin/40 parts lead.

3. Keep the soldering iron tip clean and well-tinned.

4. Thoroughly clean the surfaces to be soldered. Use a small wire-bristle (0.5 inch or 1.25 cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.

5. Use the following desoldering technique.
   a. Allow the soldering iron tip to reach normal temperature (500°F to 600°F).

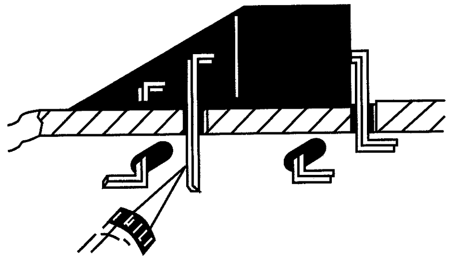
   b. Heat the component lead until the solder melts. Quickly draw away the melted solder with an anti-static, suction-type solder removal device or with solder braid.
   CAUTION: Work quickly to avoid overheating the circuit board printed foil.

6. Use the following soldering technique.
   a. Allow the soldering iron tip to reach normal temperature (500°F to 600°F).

   b. First, hold the soldering iron tip and solder strand against the component lead until the solder melts.

   c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.
   CAUTION: Work quickly to avoid overheating the circuit board printed foil or components.

   d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.



Use Solding Iron to Pry Leads

IC Removal/Replacement

Some Hitachi unitized chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

Removal

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.

2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

Replacement

1. Carefully insert the replacement IC in the circuit board.

2. Carefully bend each IC lead against the circuit foil pad and solder it.

3. Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to areas.)

"Small-signal" Discrete Transistor Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.

2. Bend into a "U" shape the end of each of three leads remaining on the circuit board.

3. Bend into a "U" shape the replacement transistor leads.

4. Connect to replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact, then solder each connection.

Power Output Transistor Devices Removal/Replacements

1. Heat and remove all solder from around the transistor leads.

2. Remove the heatsink mounting screw (if so equipped).

3. Carefully remove the transistor from the circuit board.

4. Insert new transistor in circuit board.

5. Solder each transistor lead, and clip off excess lead.

6. Replace heatsink.

Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.

2. Bend the two remaining leads perpendicularly to the circuit board.

3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.

4. Securely crimp each connection and solder it.

5. Inspect (on the circuit board copper side) the solder joints of the two "original leads". If they are not shiny, reheat them and, if necessary, apply additional solder.

Fuses and Conventional Resistor Removal/Replacement

1. Clip each fuse or resistor lead at top of circuit board hollow stake.

2. Securely crimp leads of replacement component around stake 1/8 inch from top.

3. Solder the connections.
   CAUTION: Maintain original spacing between the replaced component and adjacent components and the circuit board, to prevent excessive component temperatures.

Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board, causing the foil to separate from, or "lift-off," the board. The following guidelines and procedures should be followed whenever this condition is encountered.

In Critical Copper Pattern Areas

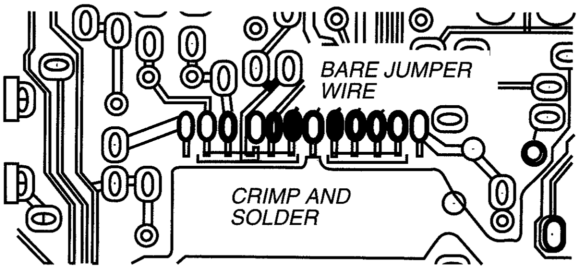
High component/copper pattern density and/or special voltage/current characteristics make the spacing and integrity of copper pattern in some circuit board areas more critical than in others. The circuit foil in these areas is designated as Critical Copper Pattern. Because Critical Copper Pattern requires special soldering techniques to ensure the maintenance of reliability and safety standards, contact your Hitachi personnel.

At IC Connections

To repair defective copper pattern at IC connections, use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections.)

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary.)

2. Carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.



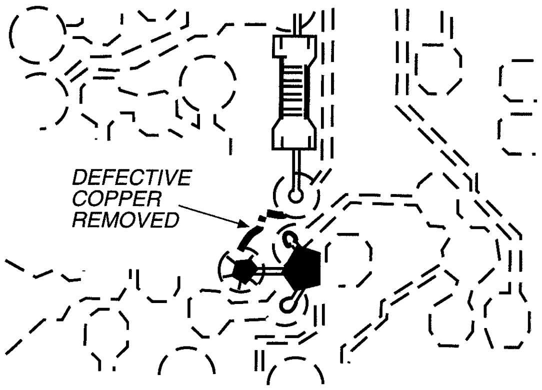
Install Jumper Wire and Solder

3. Bend a small "U" in one end of a small-gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.

4. Route the jumper wire along the path of the cut-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area, and clip off any excess jumper wire.

At Other Connections

Use the following technique to repair defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.



Insulated Jumper Wire

1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure hazardous condition will not exist if the jumper wire opens.

2. Trace along the copper pattern from both wire sides of the pattern break and locate the nearest component directly connected to the affected copper pattern.

3. Connect insulated 20-gauge jumper wire from the nearest component on one side of the pattern break to the lead of the nearest component on the other side. Carefully crimp and solder the connections.
   CAUTION: Be sure the insulated jumper wire is dressed so that it does not touch components or sharp edges.

Frequency Synthesis (FS) Tuning Systems

1. Always unplug the instrument AC power cord before disconnecting or reconnecting FS tuning system cables and before removing or inserting FS tuning system modules.

2. The FS tuner must never be disconnected from the FS tuning control module while power is applied to the instrument.

3. When troubleshooting intermittent problems that might be caused by defective cable connection(s) to the FS tuning system, remove the instrument AC power as soon as the defective connector is found and finish confirming the bad connection with a continuity test. This procedure will reduce the probability of electrical overstress of the FS system semi-conductor components.

NOTE: *These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.*

Leadless Chip Components (surface mount)

Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chip capacitor or resistor board solder pads may have holes through the board, however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitors may also be limited for the same reason. It is recommended that identical chip components be used. .

Chip resistors have a three digit numerical resistance code -1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6K resistor, 0 = 0 (jumper).

Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.

Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.

Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either

common anode or common cathode. Check the parts list for correct diode number.

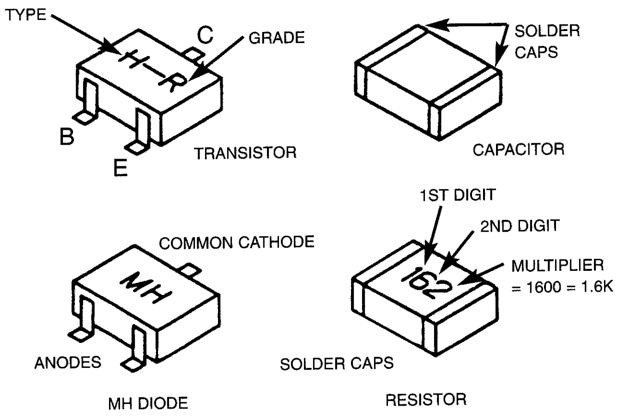
Component Removal

1. Use solder wick to remove solder from component end caps or terminals.
2. Without pulling up, carefully twist the component with tweezers to break the adhesive.
3. Do not reuse removed leadless or chip components since they are subject to stress fracture during removal .

Chip Component Installation

1. Put a small amount of solder on the board soldering pads.
2. Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt

Chip Components

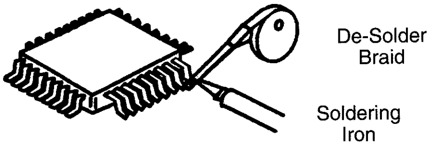

TYPE
C
GRADE
B
E
TRANSISTOR
SOLDER CAPS
CAPACITOR
COMMON CATHODE
MH
ANODES
MH DIODE
1ST DIGIT
2ND DIGIT
162
MULTIPLIER
= 1600 = 1.6K
SOLDER CAPS
RESISTOR

How to Replace Flat-IC

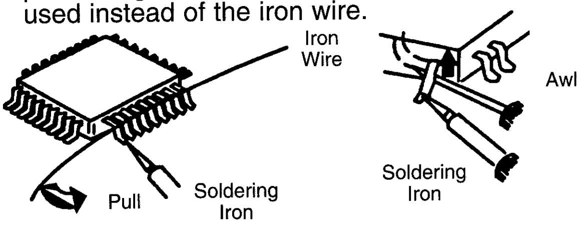
—Required Tools—

- Soldering iron
- De-solder braids
- iron wire or small awl
- Magnifier

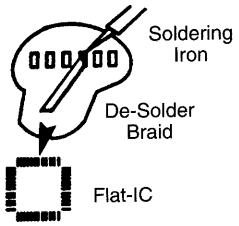
1. Remove the solder from all of the pins of a Flat-IC by using a de-solder braid.


De-Solder
Braid
Soldering
Iron

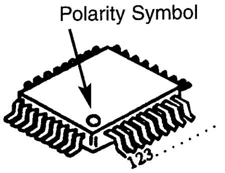
2. Put the iron wire under the pins of the Flat-IC and pull it in the direction indicated while heating the pins using a soldering iron. A small awl can be used instead of the iron wire.


Iron
Wire
Pull
Soldering
Iron
Awl
Soldering
Iron

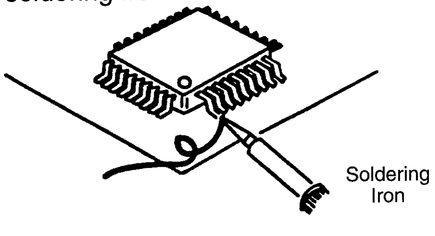
3. Remove the solder from all of the pads of the Flat-IC by using a de-solder braid.


Soldering
Iron
De-Solder
Braid
Flat-IC

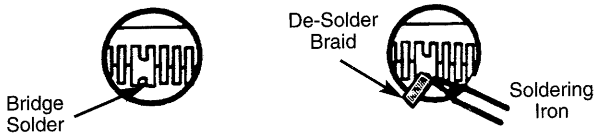
4. Position the new Flat-IC in place (apply the pins of the Flat-IC to the soldering pads where the pins need to be soldered). Properly determine the positions of the soldering pads and pins by correctly aligning the polarity symbol.


Polarity Symbol
123

5. Solder all pins to the soldering pads using a fine tipped soldering iron.


Soldering
Iron

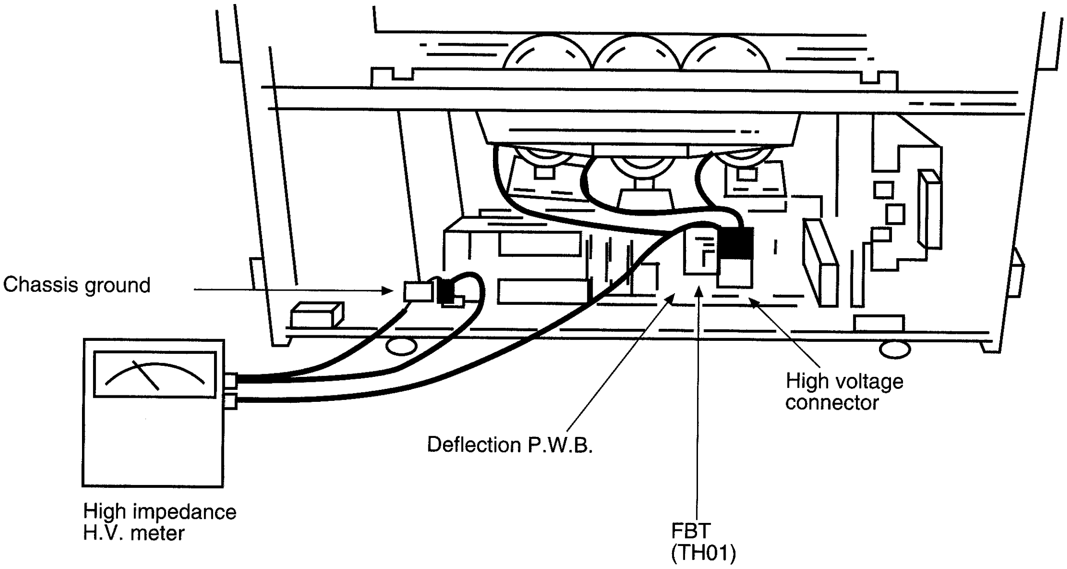
6. Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de-solder braid as shown in the figure below.


Bridge
Solder
De-Solder
Braid
Soldering
Iron

TECHNICAL CAUTIONS

High Voltage limiter circuit operation check.

1. Turn off TV and connect jig as shown in Figure 2. Adjust jig fully counter-clockwise for minimum resistance.
2. Set the AC input to 120V AC and turn on TV.
3. Confirm test pattern on CRT is a usable picture, then slowly adjust jig until the picture disappears and TV shuts down.
4. When the limiter circuit is operating properly, High Voltage will be less than 36.5 kV at 0.6mA when TV shuts down.
5. Turn off set immediately after checking circuit operation.
6. Unplug set for one minute to reset shutdown circuit. Remove jig and voltmeter.


Chassis ground
High impedance H.V. meter
Deflection P.W.B.
FBT (TH01)
High voltage connector

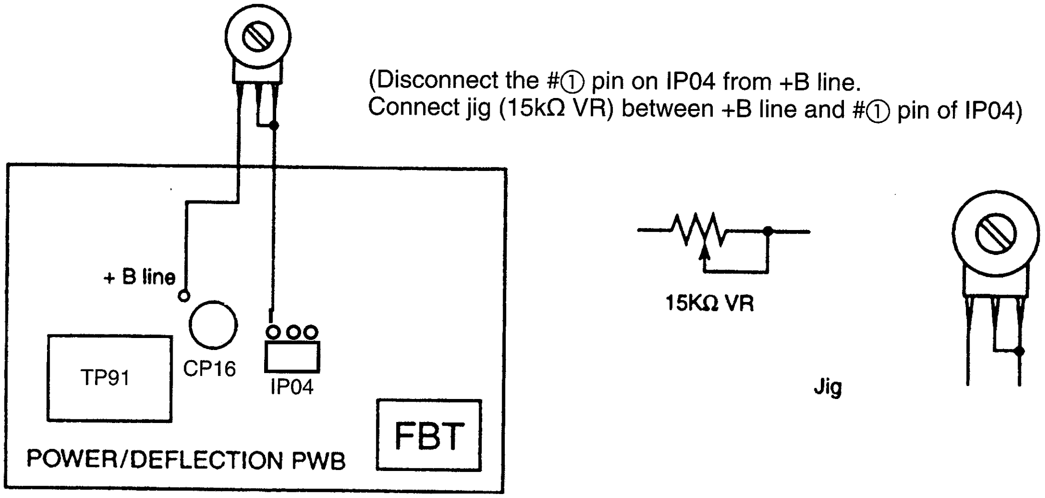

(Disconnect the #① pin on IP04 from +B line.
Connect jig (15kΩ VR) between +B line and #① pin of IP04)
+ B line
TP91
CP16
IP04
FBT
POWER/DEFLECTION PWB
15KΩ VR
Jig

Fig. 2. Deflection/Power P.C.B.

SPECIFICATIONS

Model:		53SDX89BA 60SDX88BA
Cathode-Ray Tube:	UE04511:	R=P16LFT00RFA
	UE04512:	G=P16LFT00HLA
	UE04513:	B=P16LFT00BMB
Power Input:		120 volts AC, 60 Hz
Power Consumption:		290 Watts - Maximum 245 Watts - Operating
Antenna Impedance:		75 Ohm Unbalanced VHF / UHF / CATV
Receiving Channel:	BAND	CH
	VHF	2~13
	UHF	14~69
	EXT. Mid	(A-5)~(A-1), 4+
	CATV Mid.	A~I
	CATV Super	J~W
	CATV Hyper	(W+1)~(W+28)
Intermediate Frequency:		Picture I-F Carrier 45.75 MHz Sound I-F Carrier 41.25 MHz Color Sub Carrier 42.17 MHz
Video Input:	Composite	1 Volt p-p, 75 Ohm
	Component	1 Volt p-p, 75 Ohm (Y)
	Component	0.7 Volt p-p, 75 Ohm, (Cb, Cr)
Video Output:		1 Volt p-p, 75 Ohm
Audio Input:		470 mVrms, 47 k Ohm

Stereo Audio Output:		470 mVrms, 1 k Ohm
Audio Output Power:	Front:	15 Watts per channel at 10% distortion, 8 Ohm impedence. Max. output - 18 Watts.
	Rear:	7.5 Watts per channel at 10% distortion, 8 Ohm impedence. Max output - 10 Watts.
	Center:	7.5 Watts per channel at 10% distortion, 8 Ohm impedence. Max output - 10 Watts
Anode Voltage		31.5 kV (Zero Beam Current)
Brightness:		53SDX89BA - 240 cd/m^2 60SDX88BA - 180 cd/m^2 (white screen)
Speakers:		2 Woofers - 5 inch (12 mm) round 2 Tweeters - 2 inch (5 mm) round 2 Center Speakers - 4 inch (10 mm) round

Dimension:

	53SDX89BA	**60SDX88BA**
Height (in.)	$55\frac{3}{4}$	$60\frac{7}{16}$
Width (in.)	46	$51\frac{3}{8}$
Depth (in.)	$26\frac{1}{4}$	$27\frac{1}{2}$
Weight (lbs.)	200	255

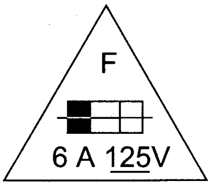
Circuit Board Assemblies:

C.P.T. (B) P.W.B.
C.P.T. (G) P.W.B.
C.P.T. (R) P.W.B.
Audio Out P.W.B.
2 H P.W.B.
Sub-Power P.W.B.
Signal P.W.B.
Terminal P.W.B.
VM P.W.B.
Surround P.W.B.
Power/Deflection P.W.B.
Control P.W.B.
Control Sub P.W.B.
Sensor Distribution P.W.B.
Sub Deflection P.W.B.

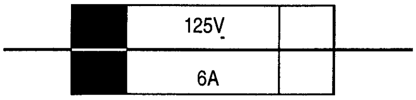
CIRCUIT PROTECTION

CAUTION: Below is an EXAMPLE only. See Replacement Parts List for details. The following symbol near the fuse indicates fast operation fuse (to be replaced). Fuse ratings appear within the symbol.

Example:



"RISK OF FIRE - REPLACE FUSE AS MARKED"

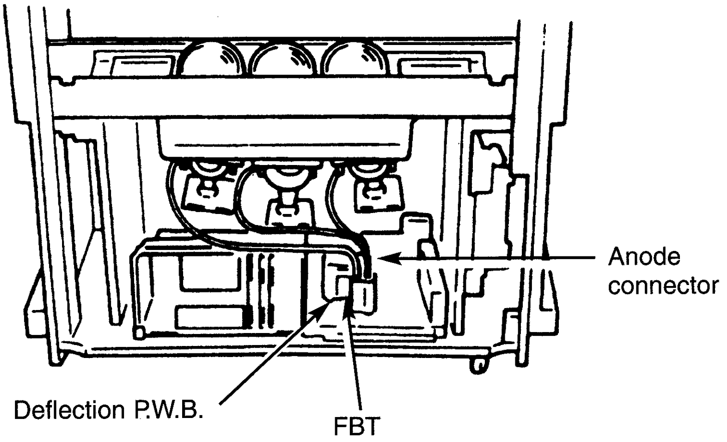


F901

The rating of fuse F901 is 6.0A - 125V.
Replace with the same type fuse for continued protection against fire.

CAUTIONS WHEN CONNECTING / DISCONNECTING THE HV CONNECTOR

Perform the following when the HV connector (anode connector) is removed or inserted for CPT replacement, etc.


Anode connector
Deflection P.W.B.
FBT

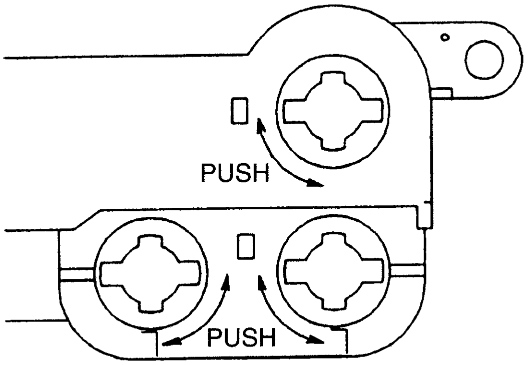


Fig. A

During Removal

1. Roll out silicon cover from FBT's contact area slowly.
2. While turning the connector about 90 degrees following the arrow (0 position), push the connector slightly towards the case. (Fig. A)
3. Remove the connector slowly by pulling it away from the case.

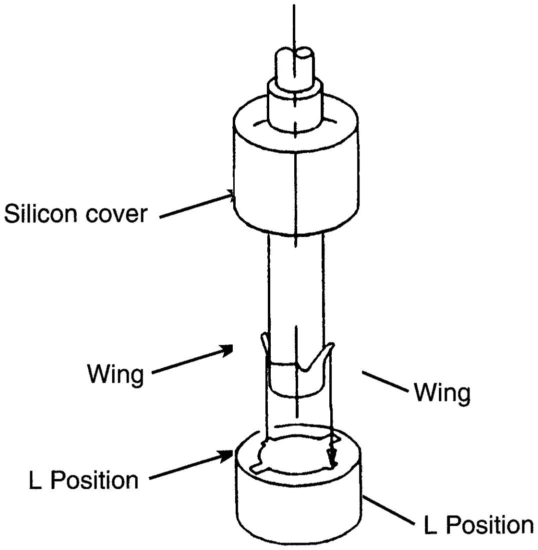

Silicon cover
Wing
Wing
L Position
L Position

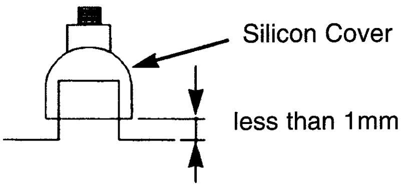
Fig. B

During Insertion

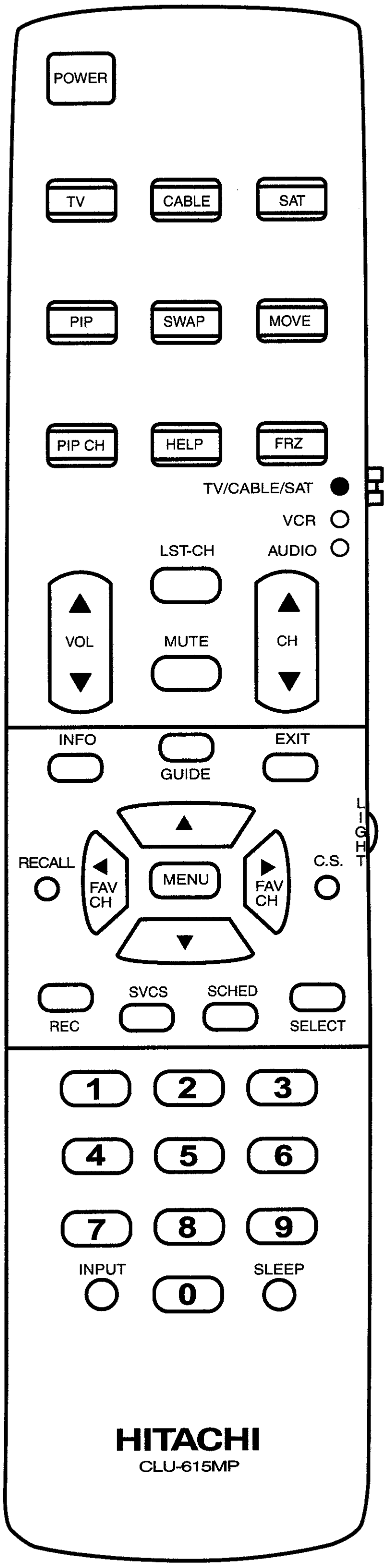
1. Please refer to direction for insertion as shown in Fig. B (L position). Insert connector until "CLICK" sound is heard.
2. Make sure the connector is pressed right in, so that it has a good contact with the spring.
3. Confirm the contact by pulling the connector slightly. (Don't pull hard because it may damage the connector).
4. Cover the high voltage output by carefully pushing silicon cover onto it. (Don't turn the connector).

(REMARK)

1. Make sure the silicon cover is covering the high voltage output.


Silicon Cover
less than 1mm

THE REMOTE TO CONTROL YOUR TV


POWER
TV
CABLE
SAT
PIP
SWAP
MOVE
PIP CH
HELP
FRZ
TV/CABLE/SAT
VCR
AUDIO
LST-CH
VOL
MUTE
CH
INFO
GUIDE
EXIT
LIGHT
RECALL
FAV CH
MENU
FAV CH
C.S.
SVCS
SCHED
REC
SELECT
1
2
3
4
5
6
7
8
9
INPUT
0
SLEEP
HITACHI
CLU-615MP

NOTES:

I. Adjustment Procedure

All adjustments for the 53SDX89BA/60SDX88BA (DP86V chassis) are the same as the 53SDX89B/60SDX88B (DP86 chassis) service manual PA No. 0122 and PA No. 0113. The only difference is the I^{2}C Memory Initialize page.

II. Circuit Schematics, PWB films, and Parts List

There are minor differences between the non-V-Chip model 53SDX89B/60SDX88B (DP86 chassis) and the V-Chip model 53SDX89BA/60SDX88BA (DP86V chassis). These differences are in the Signal, Deflection and Terminal circuitry. Refer to this manual regarding circuit schematics, PWB films, and Parts List regarding these three circuitries. Refer to service manual PA No. 0113 and PA No. 0122 for other information.

1. ASSEMBLED P.W.B. ADJUSTMENT

1.1 Memory Initialization

Adjustment procedure

(1) Press INPUT key on Control Panel and then Power On to access I²C adjustment mode.

(2) Receive signal on main picture. (NTSC, SDTV, or HDTV).

Some menu pages have I²C adjustments for SDTV and HDTV. The set will automatically allow you to set these items only when a SDTV or HDTV signal is input to the COMPONENT jacks on the back of the TV. See table below.

	SIGNAL	ASPECT	fH	COLOR
HDTV	1080I	16:9	33.75kHz	Y Pb Pr
SDTV	480P	4:3	31.5 kHz	Y Cb Cr
NTSC	480I	4:3	15.75kHz	Y Cb Cr

(3) Check the OSD according to table below, using ▲▼ buttons on Remote Control.

*: Adjustable Data

Others: Fixed data (be careful not to change)

(4) Press MENU key to exit I²C ADJUST mode.

NOTE: (1) If there is a different value than shown in table above, for fixed data, adjust it using ◀▶ buttons (only in this case).

(2) When exchanging microprocessor and TV is turned on for first time, it requires initialization of Memory Initial on Page 1 of I²C adjustment menu page.

(3) FIRST TIME TOUR can be turned off at first power ON by pressing MENU while FIRST TIME TOUR is running.

FACTORY ADJUSTMENT MODE

MEMORY INIT		☐	
DEF RESET		☐	
	UPC1885	315	3375
*	H POSITION	40	3F
	V POSITION	3F	3F
*	H SIZE	29	45
*	V SIZE	3B	3D
*	SIDE PIN	0B	0F
*	TRAPEZOID	1F	1D

UPC 1885		315	3375
	H FREQ	6	6
	H SEN	1F	1F
*	H F/V	F5	F1
	H DUTY	F	F
	VS LIN	F	F
	VC LIN	F	F
	VO SIZE	1F	1B
	V CHIP		
	POLLING	F	F
	TIME OUT	5	5
	STATUS	2	2

V/C RESET	☐
SERVICE	☐
SUB BRT	☐
3DYC RESET	☐
PIP RESET	☐
H POSITION	7B
V POSITION	0C
TA1270	
PIP TINT	3E
PIP CNT	0D
PIP CLR	10
FLEX RESET	☐

TA1276	NTSC	SDTV	HDTV
SHARP	3A	3A	3A
COLOR	3A	40	3A
TINT	48	38	38
R-Y PH	2	2	0
R/B GA	1	2	3
G-Y PH	1	1	2
G/B GA	0	0	0
APACON	7	7	5

TA1276	
G DRV	3A
B DRV	31
RGB BRT	50
RGB CNT	50
SUB CNT	1A
VSM PH	3
VSM GA	0
CLR G	3
CLT	0
OS ACL	1
TX ACL	0

TA1276	
BSP	3
APL/BS	0
S-TRK	0
B COR	1
B GA	0
B DET	0
DABL PN	0
DABL GH	7
ABL PN	4
ABL GA	4

FLEX CONT	NTSC	SDTV	HDTV
CORE H	0	0	1
CORE V	0	0	1
ENH H	0	0	2
ENH V	2	2	2
ENH SEL	1	1	1
LOCA HD	1F	1F	1F
LOCA VD	1F	1F	1F

FLEX CONT	
Y/C DELAY	75
BBLK LEVEL	4
RBLK LEVEL	3
MSK STR	7
MSK END	7
PLL MSK	1
MSK POL	1
PNL BRT	5F

FLEX CONT

	NTSC	SDTV	HDTV
PLL H	7	7	7
MSK H	7F	7F	7F
MSK V	7F	7F	7F
VT POS	7F	7F	7F
VB POS	7F	7F	7F
HR POS	7F	7F	7F
HL POS	7F	7F	7F
V COMP	7	7	7
V IND	7	7	7
PNL T	7	7	7
PNL B	7	7	7

TA1276

BACK P	2
VPK LMT	0
CLR FREQ	03
TC90A17	
PLL W	0
PLL R	0
I CLP	6
Q CLP	6
Y CLP	40

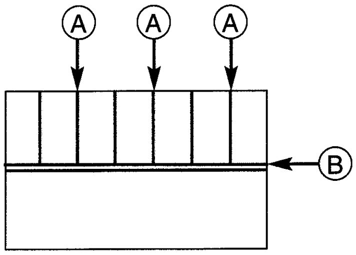
1.2 Comb filter operation check

Adjustment preparation

(1) Receive the color bar signal at the regular tuning point.
(2) Set the CONTRAST control to MAX and the other controls to center.
(3) Set the AI to OFF, and 3D Y/C to ON in Advanced Settings.

Adjustment procedure

(1) Check that between the color bars there are not line dots every second color bar as shown in the drawing.



Check Ⓐ and Ⓑ line dots.

	DP86V
Ⓐ	No Dots
Ⓑ	No Dots

1.3 Surround Check

Adjustment preparation

(1) Input the following audio signals to the audio input of the VIDEO INPUT terminals.

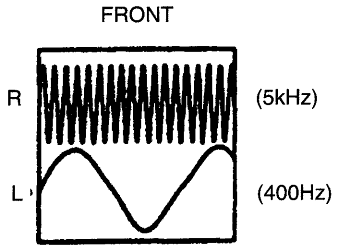
- When checking surround:
  ① L CH: 400 Hz sine wave, 475mVrms
  ② R CH: 5kHz sine wave, 475mVrms
- Set the AUDIO ADVANCED SETTING for INT. SPEAKERS ON,DYNAMIC BASS OFF, LOUDNESS OFF and PERFECT VOLUME OFF.
- Set the volume control of FRONT, CENTER, and REAR to around the center.
- Set the BASS, TREBLE and BALANCE to center.

Note: Front waveform: Front speaker output of the set.
Rear wavefrom: Rear speaker output of the set.
Center waveform: Center speaker output of the set.

1.3.1 Surround off check

Adjustment procedure

(1) Set to SURROUND: OFF and check that the waveform shown below is obtained (Input signal ① and ②).

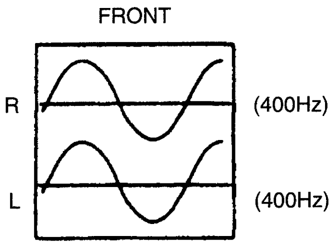


Note: The rear and center will have no output.

1.3.2 Surround off/monaural check

Adjustment procedure

Check that the following waveform is obtained. The amplitudes of 2 channels are equal.
(Input signal ① only-L mono input).



Note: Monaural check can be omitted. The rear and center have no output.

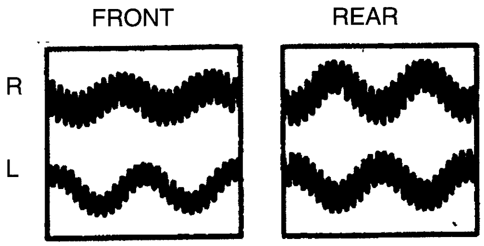
1.3.3 Matrix surround check

Adjustment procedure

(1) Set to SURROUND: MATRIX

- Check that the following waveforms are obtained. (Input signal ① and ②).

- Front: Check that the phases of R and L are different and 400Hz is superimposed on 5kHz. The amplitudes of R and L are different.
- Rear: Check that the phases of R and L are opposite and 400Hz is superimposed on 5kHz. The amplitudes of R and L are different.

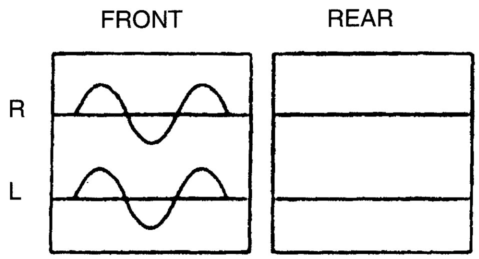


Note: Center has no output.

1.3.4 Matrix surround/monaural check

Adjustment procedure

- Check that the following waveforms are obtained. (Input signal ① only-L mono input).
- Front: R and L waveforms are almost equal.
- Rear: R and L waveforms are almost Zero.



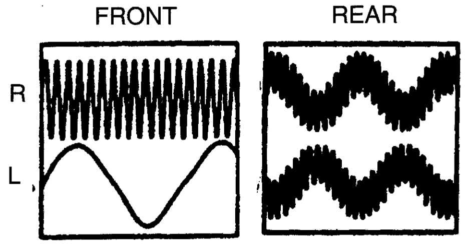
Note: Center has no output.

1.3.5 Hall surround check

Adjustment procedure

(1) Set to SURROUND: HALL.
(Input signal ① and ②).

- Front: Check that the phases of R and L signals are different and 400 Hz is superimposed on 5kHz.
- Rear: Check that the R and L are opposite and 400Hz is superimposed on 5kHz. The R and L amplitudes are equal.

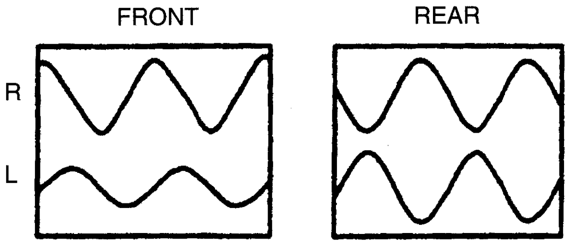


Note: Amplitude levels of front R and L are not even depending on P.W.B. Center has no output.

1.3.6 Hall surround/monaural check

Adjustment procedure

- Check that the following waveforms are obtained. (Input signal ① only-L mono input).
- Front: The phases of R and L are different. The amplitudes are different.
- Rear: The phases of R and L are opposite.



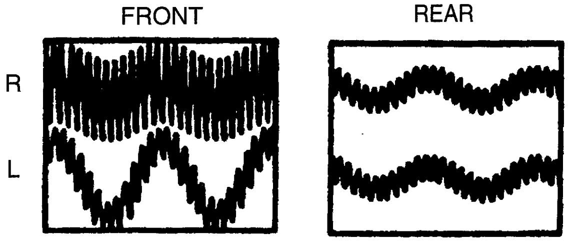
Note: Center has no output.

1.3.7 Dolby surround check

Adjustment procedure

(1) Set to SURROUND:DOLBY-PRO LOGIC-NORMAL

- Check that the following waveforms are obtained. (Input Signal ① and ②)
- Front: 400 Hz is superimposed on 5kHz.
- Rear: R and L are the same signal and 400Hz is superimposed on 5kHz.



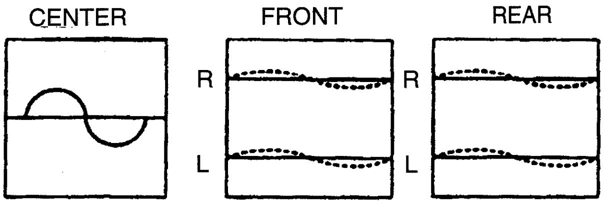
Note: MODE: PRO LOGIC (NORMAL)

1.3.8 Dolby surround/monaural check

Adjustment procedure

(1) Set to SURROUND: DOLBY-PRO LOGIC-NORMAL

- Check that the following waveforms are obtained.
(Input signal ① only-L mono input).
- Front: Almost no output from both R and L.
- Center: Same as the audio input signal.
- Rear: Almost no output from both R and L.



⚠ **Important:** High Voltage adjustment and Horizontal Drive Frequency adjustment should NOT be adjusted in field. These are adjusted at factory using precise loads and should NOT be readjusted.

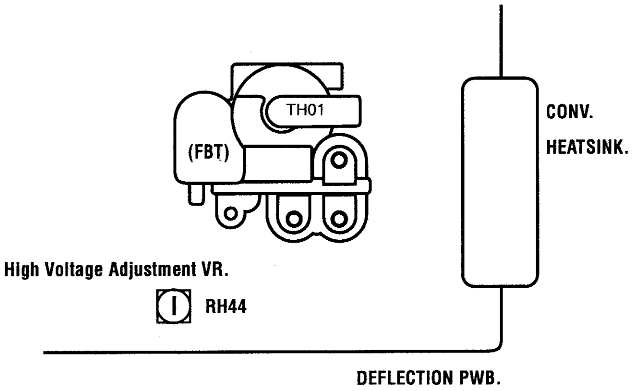
1.4 High Voltage Adjustment (should NOT be readjusted in field).

Adjustment preparation

1. Connect High Voltage meter between FBT High Voltage output. Connect GND of High Voltage meter to CPT GND or FBT GND.
2. Check that High Voltage adjustment VR (RH44) is counter-clockwise fully (located behind FBT on DEFLECTION PWB).
3. Receive color bar signal.
4. VIDEO control should be reset.

Adjustment procedure

1. Adjust High Voltage to following spec. by turning VR RH44 clockwise slowly. (This should never need adjustment).
   ADJ. SPEC = 31. 5kV +/-0. 5kV
2. After adjustment, fix VR RH44 by Silicone glue (KE40RTV).



1.5 Horizontal Drive Frequency Adjustment (should NOT be readjusted in field).

Adjustment preparation

1. Connect frequency counter to PDD1 connector 7pin & PDD1 3, 4, 6 or 10pin (GND).
2. VIDEO control should be reset.

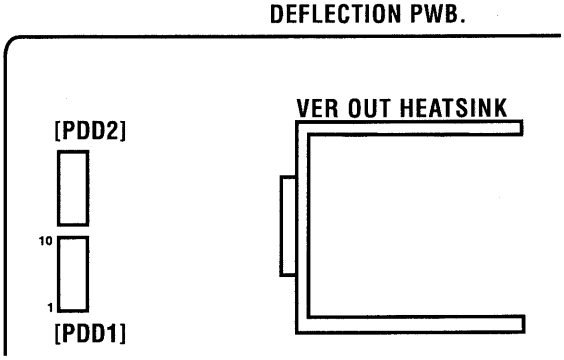
Adjustment procedure

NTSC MODE

1. Receive NTSC color bar signal.
2. Short between PDD 1 connector 7pin & PDD1 3, 4, 6 or 10pin (GND).
3. Go to I^{2}C ADJ. mode by holding INPUT key on front panel, then pressing POWER button.
4. Choose [H. F. V.] item of I^{2}C ADJ items.
5. Adjust HOR. DRIVE frequency to follwing spec. by changing value of [H. F. V.] (This should never need adjustment).
   ADJ. SPEC. = 31. 5kHz +/-0. 25kHz.

HD MODE

1. Input HD (1080I fH=33. 75kHz) signal to INPUT 2 component terminal.
2. Short between PDD 1 connector 7pin & PDD1 3, 4, 6 or 10pin (GND).
3. Go to I^{2}C ADJ. mode by holding INPUT key on front panel, then pressing POWER button.
4. Choose [H. F. V.] item of I^{2}C ADJ items.
5. Adjust HOR. DRIVE frequency to following spec. by changing value of [H. F. V]. (This should never need adjustment).
   ADJ. SPEC. = 33. 75kHz +/-0. 25kHz.



2. FINAL ASSEMBLY ADJUSTMENT

2.1 Cut Off Adjustment

Adjustment preparation

1. Set R and G drive VR's on CPT P.W.B. to center.
2. Adjust screen VR's on Focus Pack fully counterclockwise.
3. Adjust Focus VR's on Focus Pack fully clockwise.
4. Set video conditions to factory reset.
5. The vertical incident illumination on the screen should be 20 lux or less (room should be dark).

Adjustment procedure

1. Press INPUT key on control panel and then POWER ON to access I^{2}C adjustment mode.
2. Choose "SERVICE" item from I^{2}C adjustment menu by pressing cursor ▶.
3. Screen VR should be turned clockwise gradually and set so that retrace line begins to appear.
4. Return to "NORMAL" mode by cursor ▶ again.
5. Adjust Focus VR's so that focus is even all around screen.

2.2 DCU Cross Hatch Phase Setting

Adjustment preparation

1. Cut off adjustment should finished.
2. Set video conditions to factory reset.

Adjustment procedure

PROGRESSIVE MODE

1. Receive any NTSC signal.
2. Push "SERVICE ONLY" SW on DEFLECTION PWB. (Going to DCU ADJ. mode).

(3) Push HELP key on R/C. (Green cross hatch is displayed).
Then push EXIT key on R/C. (Character pattern is displayed. This is the PHASE setting mode).

(4) Set PH-H phase data as shown below by using 4 and 6 key on R/C.

(5) Set PH-V phase data as shown below by using 2 and 5 key on R/C.

(6) Set CR-H phase data as shown below by using ◀ and ▶ key on R/C.

(7) Set CR-V phase data as shown below by using ▲ and ▼ key on R/C.

(8) Push HELP key on R/C to exit from the PHASE mode.

(9) Push MOVE key 2 times on R/C to write the phase data to memory.

(10) When Green dots are displayed, push MUTE key to return to DCU ADJ. mode.

(11) Push "SERVICE ONLY" SW to return to RF or VIDEO mode.

HD MODE

(12) Receive any HD signal (Set to video: 2 mode w/ HD input to component jacks).

(13) Repeat steps (2) ˜(11) above.

PROGRESSIVE MODE

PHASE MODE

PH-H: BD
PH-V: 0D
CR-H: 4C
CR-V: 00

HD MODE

PHASE MODE

PH-H: BD
PH-V: 06
CR-H: 4C
CR-V: 0C

2.3 Raster Tilt adjustment (Deflection yoke)

Adjustment preparation

(1) The set can face east or west.

(2) Input the single cross test signal.

(3) Set video conditions to factory reset.

(4) The lens focus adjustment should have been coarse adjusted.

(5) The electric focus should have been coarse adjusted.

(6) The digital convergence RAM should be cleared (uncorrected state). With the TV set off, press and hold the service switch located on the Power/Deflection PWB and then press the power button.

(7) Start adjustment 20 minutes or more after TV is turned on.

Adjustment procedure

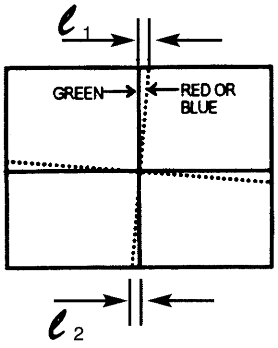
(1) Apply covers to the R and B lenses and project only green light.

(2) Turn the G deflection yoke and adjust the vertical raster inclination.

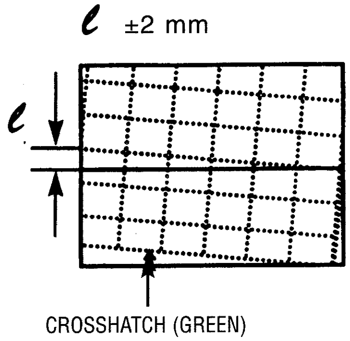
(3) Then, remove the cover of R or B lens and project red or blue light and green light together on screen.

(4) Turn the deflection yoke of R or B and set so that the inclination of R or B with respect to the green light is as shown below on the top and bottom sides.

(5) After raster inclination adjustment, fixing screw of DY should be screwed with 12±2kg-cm torque.



$\ell_1, \ell_2 \leq \pm 2$mm



Notes: (1) If internal cross-hatch does not appear after clearing RAM data, press service switch again, on POWER/DEFLECTION PWB.
(2) To restore old RAM data, turn TV off and on.

2.4 Beam alignment

Adjustment preparation

(1) Adjust at least 30 minutes after turning on power switch.

(2) Raster tilt should be completed. Raster position, horizontal and vertical size, and optical focus adjustment should be coarse adjusted.

(3) Set video conditions to factory reset.

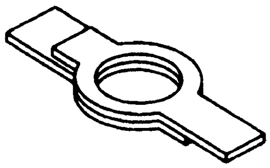
(4) Receive cross-hatch signal. (Use of internal cross-hatch signals allowed.)

(5) Short-circuit all metal parts (metal fittings, centering magnet) installed on the projection tubes to GND's of the projection tubes.
Since metal parts are charged with electricity, shocks may be caused if they are not short circuited.

Adjustment procedure

(1) Green (G) tube beam alignment adjustment. Short-circuit 2P subminiature connector plug pins of Red (R) and Blue (B) on the CPT boards and project only Green (G) light or you may cover the R and B lens.

(2) Put Green (G) tube beam alignment magnet to the cancel state as shown below.



(3) Turn the Green (G) static focus (Focus Pack) counterclockwise all the way and make sure of position of cross-hatch center on screen. (Halo state.)
(4) Turn the Green (G) static focus (Focus Pack) clockwise all the way. (Blooming state.)
(5) Turn two magnets forming alignment magnet in any desired direction and move cross-hatch center to position found in (3).
(6) If image position does not shift when Green (G) static focus (Focus Pack) is turned. Green (G) beam alignment has been completed.
(7) If image position shifts when Green (G) static focus (Focus Pack) is turned, repeat (2)-(6).
(8) Conduct beam alignment for red (R) focus: Focus Pack UFPK Blue (B) focus: Focus Pack UFPK.
(9) Upon completion of adjustment, fix beam alignment magnets with white paint.

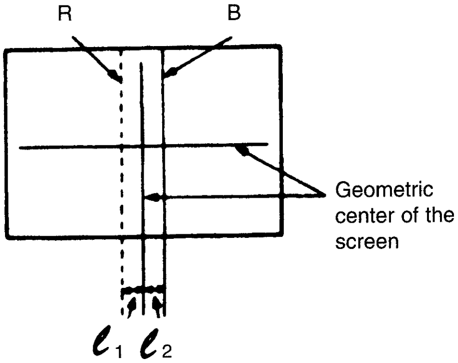
2.5 Raster position adjustment

Adjustment preparation
(1) The set can face east or west.
(2) Input the single cross test signal.
(3) Set video conditions to factory reset.
(4) The electric focus should have been coarse adjusted.
(5) The digital convergence RAM should be cleared (uncorrected state). With the TV set off, press and hold the service switch located on the Power/Deflection PWB and then press the power button.
(6) Start adjustment 20 minutes or more after TV is turned on.

Adjustment procedure
(1) Turn the centering magnets for red, green, and blue to satisfy the condition below. The red and blue horizontal lines should match with green.

	ℓ_1 (RED)	ℓ_2 (BLUE)
53”	15	25
60”	15	25

Tolerance: ± 2mm



NOTES: (1) If internal cross-hatch does not appear after clearing RAM data, press service switch again.
(2) To restore old RAM data, turn TV off and on.

2.6 Horizontal size adjustment

Adjustment preparation
(1) The set can face east or west.
(2) Set video conditions to factory reset.
(3) The electric focus should have been coarse adjusted.
(4) Start adjustment 20 minutes or more after TV is turned on.

Adjustment procedure

PROGRESSIVE MODE

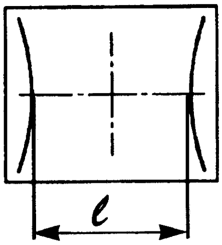
(1) Receive any NTSC signal.
(2) Press and hold the SERVICE ONLY SW on DEFLECTION PWB and press the MUTE key on Remote.
Green DCU cross-hatch and I^2C Adjustment MENU should appear and digital convergence RAM should be cleared (uncorrected state).
(3) Choose H. SIZE item by using Remote ▲,▼ cursor buttons.
(4) Adjust H. SIZE as following by using Remote ◀,▶ cursor buttons.

HD MODE

(1) Input 1080I (fH=33. 75kHz) component signal to VIDEO 2.
(2) Press and hold the SERVICE ONLY SW on DEFLECTION PWB and press the MUTE key on Remote.
Green DCU cross-hatch and I^2C Adjustment MENU should appear and digital convergence RAM should be cleared (uncorrected state).
(3) Choose H. SIZE item by using Remote ▲,▼ cursor buttons.
(4) Adjust H. SIZE as following by using Remote ◀,▶ cursor buttons.
(5) After adjustment, press SERVICE ONLY SW to exit from I^2C adjustment mode.

ℓ =	PROGRESSIVE MODE	HD MODE
53”	1050	1050
60”	1190	1190

Tolerance: ± 5mm



Note: (1) If internal cross-hatch does not appear after clearing RAM data, press service switch again.
(2) To restore old RAM data, turn TV off and on.

2.7 Vertical size adjustment

Adjustment preparation

1. The set can face east or west.
2. Set video conditions to factory reset.
3. Horizontal size adjustment should be finished.
4. The electric focus should have been coarse adjusted.
5. Start adjustment 20 minutes or more after TV is turned on.

Adjustment procedure

PROGRESSIVE MODE

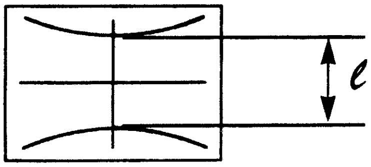
1. Receive any NTSC signal.
2. Press and hold the SERVICE ONLY SW on DEFLECTION PWB and press the MUTE key on Remote.
   Green DCU cross-hatch and I²C Adjustment MENU should appear and digital convergence RAM should be cleared (uncorrected state).
3. Choose V. SIZE item by using Remote ▲,▼ cursor buttons.
4. Adjust V. SIZE as following by using Remote ◀,▶ cursor buttons.

HD MODE

1. Input 1080I (fH=33. 75kHz) component signal to VIDEO 2.
2. Press and hold the SERVICE ONLY SW on DEFLECTION PWB and press the MUTE key on Remote.
   Green DCU cross-hatch and I²C Adjustment MENU should appear and digital convergence RAM should be cleared (uncorrected state).
3. Choose V. SIZE item by using Remote ▲,▼ cursor buttons.
4. Adjust V. SIZE as following by using Remote ◀,▶ cursor buttons.
5. After adjustment, press SERVICE ONLY SW to exit from I²C adjustment mode.

ℓ =	PROGRESSIVE MODE	HD MODE
53"	680	700
60"	770	795

Tolerance: ± 5mm



Note: (1) If internal cross-hatch does not appear after clearing RAM data, press service switch again (on POWER/DEFLECTION PWB).
(2) To restore old RAM data, turn TV off and on.

2.8 Trapezoid Distortion Adjustment

Adjustment preparation

1. Set video conditions to factory reset.

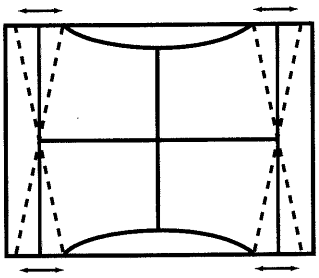
Adjustment procedure

PROGRESSIVE MODE

1. Receive any NTSC signal.
2. Press and hold the SERVICE ONLY SW on DEFLECTION PWB and press the MUTE key on Remote.
   Green DCU cross-hatch and I²C Adjustment MENU should appear and digital convergence RAM should be cleared (uncorrected state).
3. Choose TRAPEZOID item by using Remote ▲,▼ cursor buttons.
4. Adjust TRAPEZOID as following by using Remote ◀,▶ cursor buttons.

HD MODE

1. Input 1080I (fH=33. 75kHz) component signal to VIDEO 2.
2. Press and hold the SERVICE ONLY SW on DEFLECTION PWB and press the MUTE key on Remote.
   Green DCU cross-hatch and I²C Adjustment MENU should appear and digital convergence RAM should be cleared (uncorrected state).
3. Choose TRAPEZOID item by using Remote ▲,▼ cursor buttons.
4. Adjust TRAPEZOID as following by using Remote ◀,▶ cursor buttons.
5. After adjustment, press SERVICE ONLY SW to exit from I²C adjustment mode.



Vertical Screen frame line & edge of vertical DCU crosshatch line should be parallel.

2.9 Side Pin Distortion Adjustment

Adjustment preparation

1. Set video conditions to factory reset.

Adjustment procedure

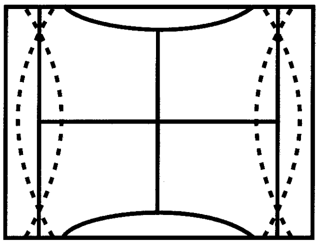
PROGRESSIVE MODE

1. Receive any NTSC signal.
2. Press and hold the SERVICE ONLY SW on DEFLECTION PWB and press the MUTE key on Remote.
   Green DCU cross-hatch and I²C Adjustment MENU should appear and digital convergence RAM should be cleared (uncorrected state).

(3) Choose SIDE PIN item by using Remote ▲,▼ cursor buttons.
(4) Adjust SIDE PIN as following by using Remote ◀,▶ cursor buttons.

HD MODE

(1) Input 1080I (fH=33. 75kHz) component signal to VIDEO 2.
(2) Press and hold the SERVICE ONLY SW on DEFLECTION PWB and press the MUTE key on Remote.
Green DCU cross-hatch and I²C Adjustment MENU should appear and digital convergence RAM should be cleared (uncorrected state).
(3) Choose SIDE PIN item by using Remote ▲,▼ cursor buttons.
(4) Adjust SIDE PIN as following by using Remote ◀,▶ cursor buttons.
(5) After adjustment, press SERVICE ONLY SW to exit from I²C adjustment mode.

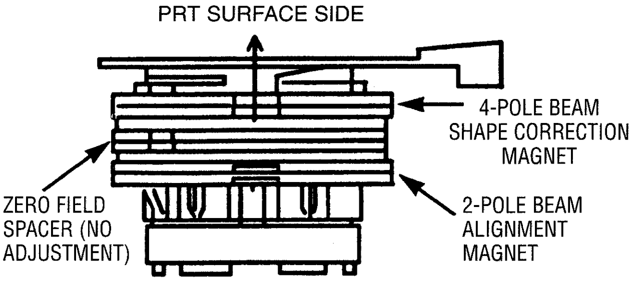


Edge of vertical DCU crosshatch line should be straight.

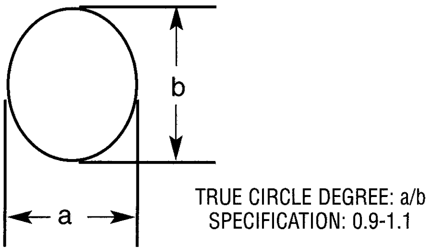
2.10 Beam form adjustment

Adjustment preparation
(1) The beam alignment should have been completed.
(2) The raster tilt, centering, horizontal/ vertical size, trapezoid and side pin adjustment should have been completed.
(3) Set video conditions to factory reset.
(4) Input the dot signal.

Adjustment procedure
(1) Green PRT beam shape adjustment. Short-circuit 2P sub-mini connectors on Red and Blue CPT P.W.B.s to project only the Green beam.
(2) Turn the green static focus VR, on the Focus Pack, fully clockwise. (Blooming.)
(3) Make the dot at the screen center a true circle using the 4-pole magnet as shown below.
(4) Also adjust the Red and Blue PRT beam shapes according to the steps (1) to (3).
(5) After the adjustment has been completed, return R, G and B static VRs to the just focus point.


PRT SURFACE SIDE
4-POLE BEAM SHAPE CORRECTION MAGNET
ZERO FIELD SPACER (NO ADJUSTMENT)
2-POLE BEAM ALIGNMENT MAGNET

TRUE CIRCLE SPECIFICATION



2.11 Lens focus adjustment

Adjustment preparation
(1) The set can face in any direction: west, east, north or south.
(2) Receive the cross-hatch pattern signal.
CONTRAST : HALF
BRIGHTNESS : MINIMUM
(3) The electrical focus adjustment should have been coarse adjusted.
(4) The raster position and raster tilt should have been adjusted.

Adjustment procedure
(1) Loosen the fixing screw on the lens cylinder so that the lens cylinder can be turned. (Be careful not to loosen too much. If it is loosened too much, rattling when tightening becomes greater and the focus may drift). After completing steps (5), (6) and (7) below, tighten the fixing screws for each lens with a torque of 12~17 Kgf•cm.
(2) Apply covers to 2 of R, G and B lenses, and project a single color on the screen and adjust in sequence.
(The adjustment order of R, G and B is only an example.)
(3) For each of the R, G and B lenses, observe the color abberation generated on the outer circumference of the cross-hatch bright line at the center section ±3 pitches vertically and horizontally from the center as well as in each corner of the screen.
(4) If the lens adjustment knob is turned clockwise, viewed from the front, the color aberration changes as follows.

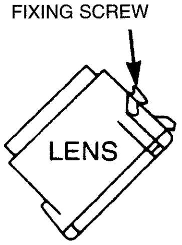
	Change of color aberration	
	Short focus	Long focus
R lens	Orange	Scarlet
G lens	Blue	Red
B lens	Purple	Green

(5) In case of G lens, set to the point where the chromatic aberration switches from blue to red. If the chromatic aberration appearing all over the screen is not the same, observe the vertical bright line at the center of the screen and set to the position where red chromatic aberration slightly appears inside and blue outside.
(6) In case of R lens, set to the position where the chromatic aberration changes from orange to scarlet. If the chromatic aberration appearing all over the screen is not the same, observe the vertical bright line at the center and set to the

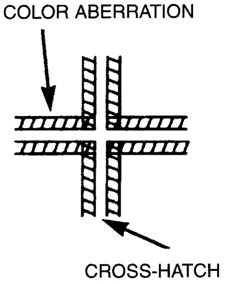
position where the scarlet chromatic aberration slightly appears inside and orange outside.

(7) In case of B lens, set to the position where the chromatic aberration changes from purple to green. If the chromatic aberration appearing all over the screen is not the same, observe the vertical bright line at the center and set to the position where green chromatic aberration slightly appears inside and purple outside.

Notes: (1) Fixing screw



(2) Color aberration



(3) Since the Green light is very important for picture quality and performance, pay special attention to its adjustment.

Note: Be careful not to touch the lens with your fingers when adjusting.

(4) For red, setting to the center between orange and scarlet is optimum.

(5) For blue, setting to the center between purple and green is optimum.

(6) All colors should have relatively uniform, good focus at all areas of screen.

2.12 Static focus adjustment

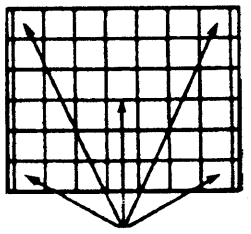
Adjustment preparation

(1) The raster tilt, raster position, horizontal/vertical size, lens focus, beam form, and beam alignment should have been adjusted.
(2) Set video conditions to factory reset.
(3) Receive the cross-hatch pattern signal.
(4) Apply covers to the lenses of colors other than the color to be adjusted and project a single color.

Adjustment procedure

(1) Red (R), Green (G) and Blue (B) static focus adjustment. Vary the static focus VR (focus pack UFPK) and make the center of the cross-hatch pattern clearest.
(2) Observe the corners of the picture and check that the focus does not get conspicuously worse.

OBSERVING POINTS OF THE CORNER OF THE PICTURE



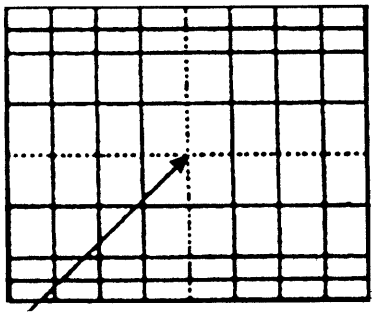
Note: Since the Green light is very important for picture quality and performance, pay special attention to its adjustment.

2.13 Digital convergence adjustment

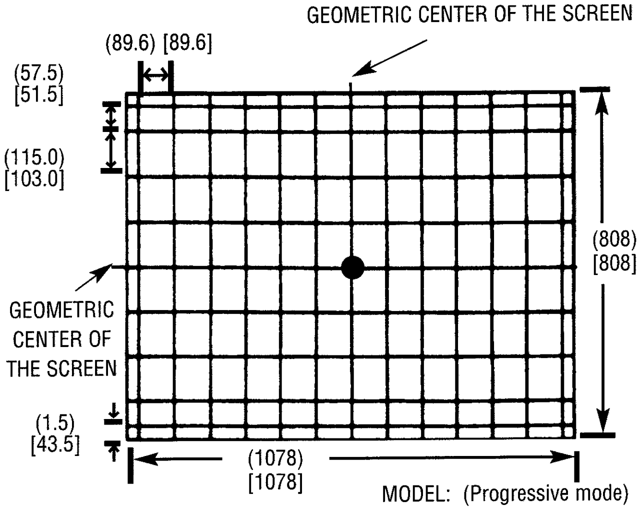
Note: If replacing a PRT, DY, etc. perform auto-digital convergence first. (Press front panel MAGIC FOCUS switch when in normal customer mode). This can eliminate the need for a complete digital convergence alignment.

Adjustment preparation

(1) Receive an RF or video signal.
(2) Set controls to factory preset.
(3) Install jig screen on the set.
(4) Note the center of the video pattern displayed. This is necessary to match dotted lines (adjustment point viewed) and actual point that is adjusted and displayed by the video signal.
(5) Press the service only switch (on POWER/DEFLECTION PWB). The pattern displayed is now the digital convergence mode.
(6) When performing a complete digital convergence adjustment CLEAR DATA in RAM. (With the TV set off, press and hold the service switch located on the Power/Deflection P.W.B. and then press the POWER button).

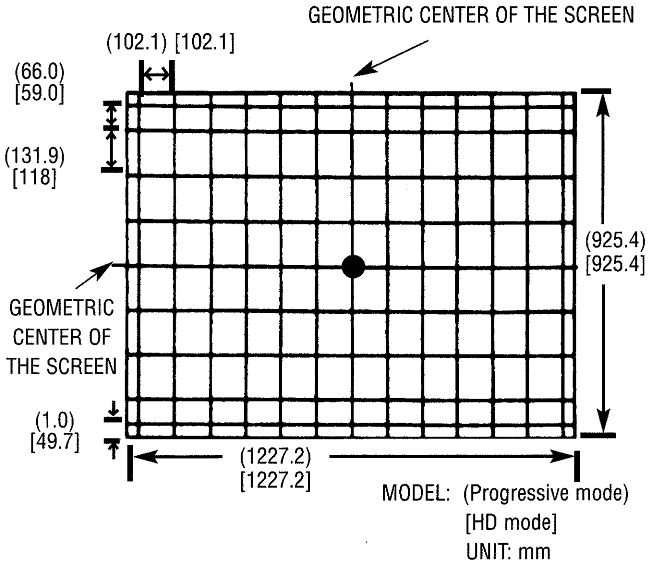


53" JIG SCREEN SPECIFICATION



MODEL: (Progressive mode)
[HD mode]
UNIT: mm

60" JIG SCREEN SPECIFICATION



Note: If only minor adjustments to convergence are needed, the jig screen is not necessary. Use digital data stored in memory and one color as a reference (red, green, or blue). DO NOT CLEAR DATA and WRITE to ROM memory.

2.13.1 Raster position adjustment

Adjustment preparation

(1) Position adjustment - This will move an entire color. Use this adjustment to match colors at the center of the screen. (Active video center from external signal and physical screen center should now match from phase adj. 2.2.).
(2) Use the buttons below to switch color to adjust.
"RECALL" - Green
"0" - Red
"INPUT" - Blue

Adjustment procedure

(1) Press the FRZ button. Extra horizontal lines appear to confirm raster position mode.
(2) Use the cursor buttons to adjust position.
(3) Press FRZ again to exit raster position mode.

Notes: (1) Other functions cannot be accessed when in raster position adjustment mode. Press FRZ and confirm extra horizontal lines disappear to exit raster position mode.
(2) Press MENU to switch between all colors displayed or adjustment color and Green only.

2.13.2 Convergence point adjustment

Adjustment preparation

(1) Select color to adjust.
"RECALL" - Green
"0" - Red
"INPUT" - Blue
(2) Use 4, 6, 2, and 5 to move the cursor position (dotted lines).
(3) Use cursor buttons to move the convergence point.
(4) Three adjustment modes are available:
  1. (3x3) Press "RECALL" 5 times
  2. (7x5) Press "0" 5 times
  3. (13x9) Press "INPUT" 5 times

For touch-up, only the (13x9) mode is necessary. This will adjust every cross-hatch intersection point on the screen.

For complete adjustment, start with (3x3) mode. This will adjust center point and eight edge points only, but will greatly reduce adjustment time. Then use (7x5) mode, and finally (13x9) mode to finish convergence.

If "S" distortion appears between cross-hatch lines repeat (7x5) mode to change calculation process while adjusting to remove distortion, then return to (13x9) mode to finish touch-up convergence.

Adjustment procedure

PROGRESSIVE MODE

(1) Receive any NTSC signal.
(2) Start adjustment at the center of the screen.
(3) Continue adjustment at next closest position.
(4) Adjust center area first, ending with edge sections.
(5) Press INFO button to perform interpolation operation. This process will take about 15 seconds and no picture will be seen at this time.
(6) After interpolation, check convergence again and repeat (1)-(5) if necessary.
(7) When convergence is acceptable, press MOVE to write data to ROM memory. ROM WRITE? is displayed to alarm system that ROM will be overwritten with new data. Press the MOVE button again to write displayed data to ROM.
(8) DATA WRITE TO ROM will take approximately 20 seconds and no picture will be displayed.
(9) Green dots will be displayed when operation is complete.
(10) Press MUTE to return to convergence pattern, then confirm again convergence is acceptable.
(11) Press MOVE (ROM WRITE) mode, then press PIP CH to initialize sensor data positions.

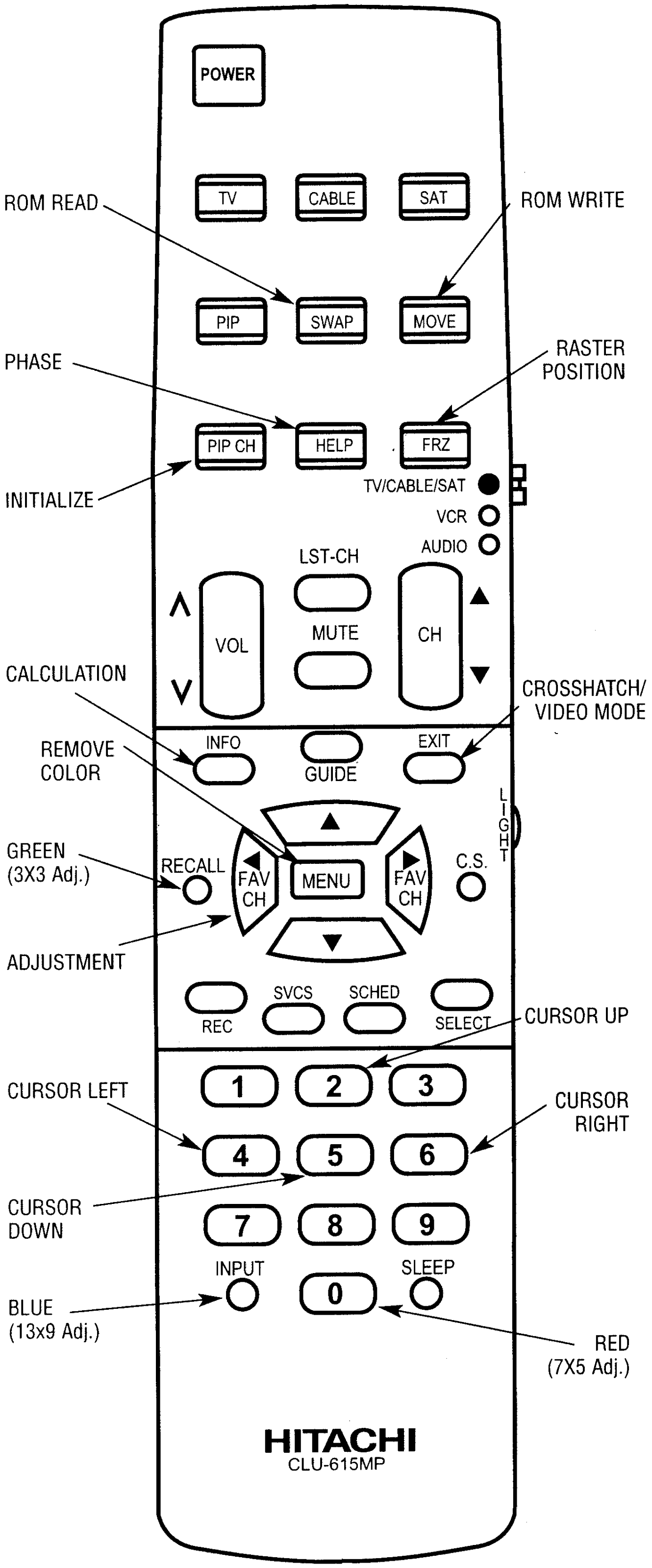
Adjustment procedure

HD MODE

(1) Receive any HD signal.
(2) Repeat steps 2~11 above.

Notes: (1) Display only green for easier adjustment and match to jig screen. Press "MENU", THEN PRESS "RECALL".
(2) Perform interpolation and data write to ROM after green adjustment. Once green has been confirmed to match jig screen, the jig screen can be removed. Do not readjust the green color after jig screen has been removed. This is now your reference color.
(3) Display green and red only and match red to green.
(4) Display all colors and match blue to green and red. Touch-up red color if necessary.
(5) Existing DATA in ROM can be read by pressing the SWAP button 2 times. This data can be used after replacing a component (CRT, DY, etc.) Where complete convergence adjustment is not necessary be careful not to overwrite this data.
DO NOT write cleared RAM data into ROM or a complete convergence adjustment will be necessary. Remember to try MAGIC FOCUS before starting convergence adjustment to minimize adjustment time.

2.13.3 Digital Convergence Remote Control


ROM READ
ROM WRITE
PHASE
RASTER POSITION
INITIALIZE
CALCULATION
CROSSHATCH/ VIDEO MODE
REMOVE COLOR
GREEN (3X3 Adj.)
ADJUSTMENT
CURSOR UP
CURSOR LEFT
CURSOR RIGHT
CURSOR DOWN
BLUE (13x9 Adj.)
RED (7X5 Adj.)
POWER
TV
CABLE
SAT
PIP
SWAP
MOVE
PIP CH
HELP
FRZ
TV/CABLE/SAT
VCR
AUDIO
LST-CH
VOL
MUTE
CH
INFO
GUIDE
EXIT
LIGHT
RECALL
FAV CH
MENU
FAV CH
C.S.
SVCS
SCHED
REC
SELECT
1
2
3
4
5
6
7
8
9
INPUT
0
SLEEP
HITACHI
CLU-615MP

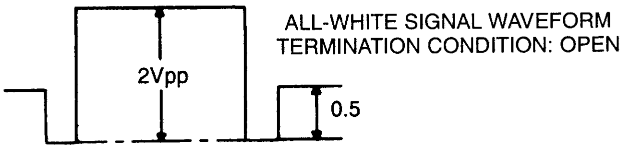
2.14 Blue defocus adjustment

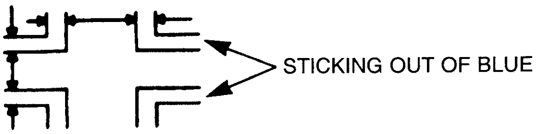
Adjustment Preparation

(1) Optical and electrical focus adjustment should have been completed.
(2) The convergence adjustment should have been completed.
(3) Set Video conditions to factory reset.
(4) Input the cross-hatch signal.

Adjustment procedure

(1) Input an all-white signal shown below to VIDEO input.
(2) Short-circuit 2P sub-mini connectors on the red and green CPT P.W.Bs. to display only the blue beam.
(3) Turn the B Focus VR (Focus Pack) fully clockwise.
(4) Measure the brightness at the center of the screen and turn the B FOCUS VR (Focus Pack) counterclockwise to adjust the brightness of blue.
(5) After the adjustment is completed, if blue exceeds the specification, turn and adjust focus so that the sticking out part of blue satisfies the specification.


2Vpp
0.5
ALL-WHITE SIGNAL WAVEFORM
TERMINATION CONDITION: OPEN


STICKING OUT OF BLUE

UNEVENNESS SPECIFICATION: ±1cd/m^2

Defocus sticking out specification

Screen Size	Blue sticking out
53"	1.0mm
60"	1.0mm

Condition: User controls are set to the initial set positions (for shipment)

Measuring point-Screen center.

Cautions: Correct the amplitude of the all-white signal periodically.

2.15 White balance adjustment

(1) Screen adjustment
(2) High brightness white balance.
(3) Low brightness balance.

Screen adjustment VRs	Drive adjustment VRs
Red: on FOCUS PACK Green: on FOCUS PACK Blue: on FOCUS PACK	Red: R829 on CPT P.W.B. Green: R879 on CPT P.W.B.

Adjustment preparation

1. (1) Start adjustment 20 minutes or more after the power is turned on.
2. (2) The vertical incident illumination on the screen should be 20 lux or less. (Room should be dark).
3. (3) Set the video settings (CONTRAST: MAX, others: center) to standard condition.
4. (4) The blue defocus and cut off adjustments should be complete.
5. (5) For low brightness white balance adjustment, input a white raster signal level of 0.145 Vp-p (Video input level).
6. (6) For high brightness white balance adjustment, input a white raster signal level of 0.715Vp-p (Video input level).
7. (7) Set the drive adjustment VRs (red and green) to 12 - 2 o'clock position.
8. (8) Set video advanced setting white control to COOL position.

Adjustment procedure

1. (1) Select the input signal for high brightness (Video level = 0.715Vpp).
2. (2) Adjust the high brightness white balance using the drive adjustment VRs (red, green).
3. (3) Select the signal for low brightness (Video level = 0.145Vpp)
4. (4) Adjust the low brightness white balance using the screen adjustment VRs (red, green, blue). (Visually adjust).
5. (5) Check that high brightness white balance is still obtained. If it is not, return to step (2).

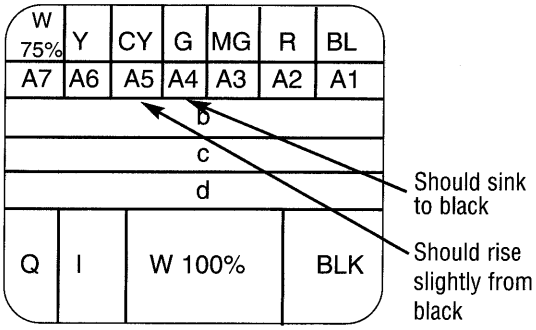
NOTE: When adjusting low level white balance, turn the screen VRs counterclockwise. The cut-off adjustment should already be complete and the screen VR's should not be increased past the level set at cut-off. Since the phosphorescent surface of the CRT is likely to be burned, be careful.

White balance = 9300° K ± 0MPCD
Color coordinate = x 0.285
y 0.295

2.16 Sub brightness adjustment

Adjustment preparation

1. (1) Start adjustment 20 minutes or more after the power is turned ON.
2. (2) Receive the color bar signal.
3. (3) Set video conditions to factory reset.
4. (4) The vertical incident illumination on the screen should be 20 lux or less. (Room should be dark).



Adjustment procedure

1. (1) Go to "Sub Brightness" adjustment in I^{2}C ADJUST mode (press Input and Power button on Control panel at same time), using ▲ ▼ buttons and then ▶ button.
2. (2) Then adjust "Sub Brightness" using ◀ ▶ buttons to increase or decrease the value, according to figure. (Visually adjust).
3. (3) After adjustment, press MENU button to exit I^{2}C ADJUST mode. (Data is stored in memory).

Note: When selecting SUB-BRIGHTNESS mode the microcontroller sets the CONTRAST and COLOR to MIN. automatically, but make sure that the other conditions are center.
Directly observe the screen by eye without using a mirror.

2.17 Horizontal and Vertical position adjustment

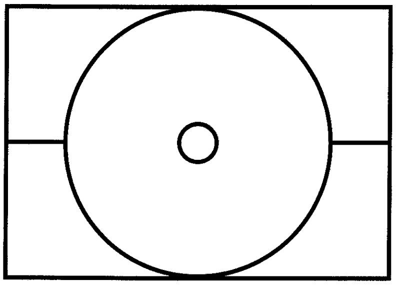
Adjustment preparation

1. (1) The set should face East or West.
2. (2) Set video conditions to factory reset.
3. (3) DIGITAL CONVERGENCE adjustment should be finished. (Progressive mode and HD mode).

Adjustment procedure

PROGRESSIVE MODE

1. (1) Receive cross hatch pattern.
2. (2) Go to I^{2}C Adjustment mode by pressing INPUT and POWER button on control panel at the same time.
3. (3) Choose H. POSI item by using Remote ▲,▼ cursor buttons.
4. (4) Adjust HOR. POSITION as following by using Remote ◀,▶ cursor buttons.
5. (5) Choose V. POSI item by using Remote ▲,▼ cursor buttons.
6. (6) Adjust V. Position as following by using Remote ◀,▶ cursor buttons.

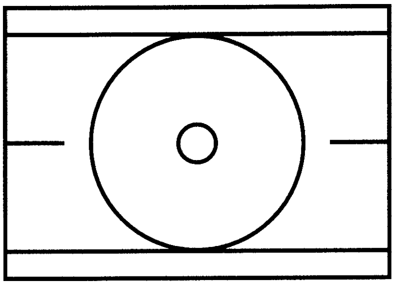


Spec: Balance Left/Right side display position for H. position.

Balance Top/Bottom side display position for V. position.

HD MODE

(1) Input 1080I (fH=33. 75kHz) component circle pattern signal to VIDEO 2.
(2) Go to I^{2}C Adjustment mode by pressing INPUT and POWER button on control panel at the same time.
(3) Choose H. POSI item by using Remote ▲,▼ cursor buttons.
(4) Adjust HOR. POSITION as following by using Remote ◀,▶ cursor buttons.
(5) Check V. POSI item by using Remote ▲,▼ cursor buttons.
(6) Adjust V. Position as following by using Remote ◀,▶ cursor buttons.



Spec: Balance Left/Right side display position for H. position.

Balance Top/Bottom side display position for V. position.

BASIC CIRCUIT DIAGRAM

SIGNAL (1/3)
SIGNAL (2/3)

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

Circuit No.	Pin No.	Voltage VDC	Pin No.	Voltage VDC
I001	1	0.0	33	2.5
	2	5.2	34	4.6
	3	5.2	35	5.0
	4	2.1	36	1.1
	5	5.2	37	1.0
	6	0.2	38	0.0
	7	2.5	39	4.4
	8	3.2	40	0.0
	9	5.2	41	0.0
	10	0.3	42	0.0
	11	0.0	43	0.0
	12	5.1	44	0.0
	13	5.1	45	3.4
	14	5.0	46	3.5
	15	5.2	47	3.5
	16	0.0	48	0.0
	17	0.0	49	5.2
	18	5.2	50	1.4
	19	5.1	51	1.4
	20	0.0	52	5.2
	21	2.5	53	4.1
	22	5.2	54	5.2
	23	0.1	55	5.2
	24	2.5	56	5.2
	25	1.3	57	5.1
	26	2.0	58	5.1
	27	2.1	59	4.0
	28	4.9	60	4.2
	29	5.1	61	5.2
	30	5.0	62	2.7
	31	0.3	63	2.8
	32	5.2	64	0.0

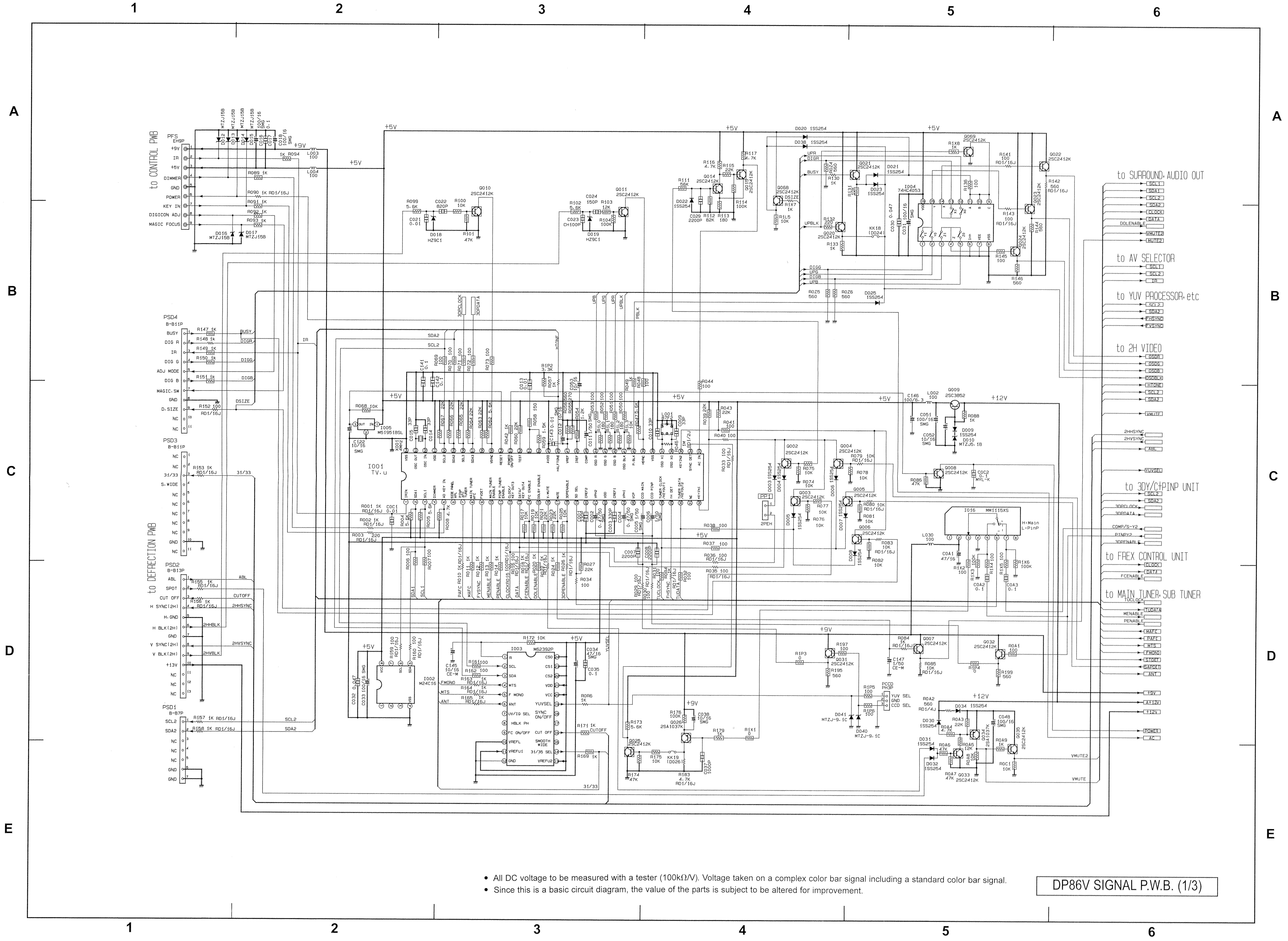
Circuit No.	Pin No.	Voltage VDC
I002	1	0.0
	2	0.0
	3	0.0
	4	0.0
	5	5.2
	6	5.2
	7	0.0
	8	5.2

Circuit No.	Pin No.	Voltage VDC	Pin No.	Voltage VDC
I003	1	5.2	13	5.2
	2	4.1	14	5.2
	3	4.2	15	0.0
	4	4.6	16	0.0
	5	5.0	17	0.0
	6	5.2	18	0.0
	7	0.0	19	0.0
	8	5.2	20	5.2
	9	5.2	21	5.2
	10	0.0	22	5.2
	11	5.2	23	5.2
	12	0.0	24	5.2

Circuit No.	Pin No.	Voltage VDC
I004	1	0.0
	2	0.0
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	5.2

Circuit No.	Pin No.	Voltage VDC
I005	1	5.2
	2	0.0
	3	5.2
I008	1	9.1
	2	0.0
	3	5.0
I012	1	5.3
	2	0.0
	3	3.3
I016	1	0.0
	2	9.1
	3	2.9
	4	0.0
	5	3.6
	6	5.1
	7	3.6
	8	0.0

Q001	B	5.2
	C	1.1
	E	5.1
Q002	B	0.0
	C	5.2
	E	0.0
Q003	B	0.0
	C	5.2
	E	0.0
Q004	B	0.0
	C	5.2
	E	0.0
Q005	B	0.0
	C	5.2
	E	0.0
Q006	B	0.0
	C	5.2
	E	0.0
Q007	B	0.1
	C	9.0
	E	0.1
Q008	B	0.8
	C	0.1
	E	0.0
Q009	B	5.8
	C	12.0
	E	5.3
Q010	B	0.0
	C	5.2
	E	0.0
Q011	B	-1.9
	C	4.4
	E	0.0
Q012	B	0.0
	C	5.2
	E	0.0
Q013	B	3.6
	C	5.2
	E	3.0
Q014	B	0.4
	C	2.6
	E	0.2
Q015	B	0.6
	C	2.5
	E	0.2
Q018	B	0.0
	C	5.2
	E	0.0



to CONTROL PWB
to DEFLECTION PWB
PFS
PSD4
PSD3
PSD2
PSD1
I001 TV.u
I002 M24C16
I003 M52392P
I004 74HC4053
I005 M51958SL
I016 MM1116XS
to SURROUND･AUDIO OUT
to AV SELECTOR
to YUV PROCESSOR･etc
to 2H VIDEO
to 3DY/C･PINP UNIT
to FREX CONTROL UNIT
to MAIN TUNER･SUB TUNER
+5V
+9V
+12V

Q019	B	3.0
	C	0.0
	E	3.6
Q020	B	0.0
	C	5.2
	E	0.0
Q021	B	0.0
	C	5.2
	E	0.0
Q022	B	0.0
	C	5.2
	E	0.1
Q023	B	0.0
	C	5.2
	E	0.1
Q024	B	0.0
	C	5.2
	E	0.1
Q025	B	0.1
	C	4.7
	E	0.0
Q026	B	2.9
	C	0.2
	E	2.5
Q031	B	2.2
	C	9.1
	E	1.6
Q032	B	3.7
	C	9.1
	E	3.1
Q033	B	0.0
	C	11.7
	E	0.0
Q034	B	11.8
	C	0.0
	E	11.8
Q035	B	0.0
	C	11.8
	E	0.0
Q036	B	7.1
	C	9.1
	E	6.4

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

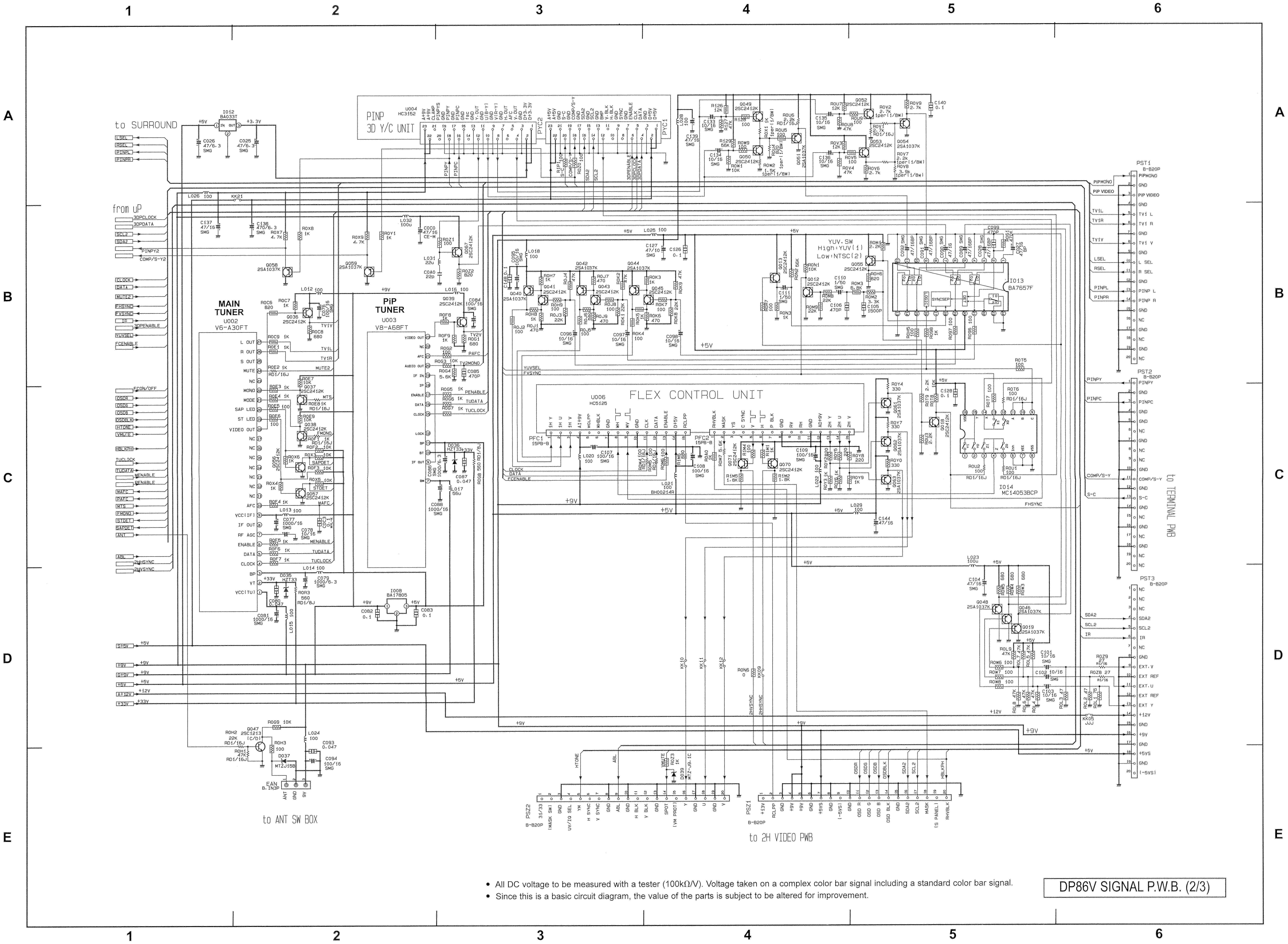
DP86V SIGNAL P.W.B. (1/3)

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

BASIC CIRCUIT DIAGRAM

SIGNAL (1/3)
SIGNAL (2/3)

Q037	B	0.7
	C	0.0
	E	0.0
Q038	B	0.7
	C	0.0
	E	0.0
Q039	B	1.5
	C	9.0
	E	0.9
Q040	B	8.4
	C	6.1
	E	9.0
Q041	B	2.8
	C	8.2
	E	2.2
Q042	B	8.3
	C	3.8
	E	9.0
Q043	B	2.7
	C	8.4
	E	2.1
Q044	B	8.3
	C	6.1
	E	8.9
Q045	B	2.8
	C	8.2
	E	2.2
Q046	B	3.0
	C	0.0
	E	3.6
Q047	B	0.6
	C	0.0
	E	0.0
Q048	B	3.0
	C	0.0
	E	3.6
Q049	B	7.0
	C	9.0
	E	6.4
Q050	B	1.3
	C	2.7
	E	0.7
Q051	B	2.7
	C	0.0
	E	3.3
Q052	B	7.0
	C	8.9
	E	6.3
Q053	B	7.1
	C	9.0
	E	6.4
Q054	B	4.8
	C	0.0
	E	5.9
Q055	B	0.2
	C	5.2
	E	0.0
Q056	B	0.7
	C	0.0
	E	0.0
Q057	B	0.7
	C	0.0
	E	0.0
Q058	B	3.1
	C	0.0
	E	3.7
Q059	B	3.1
	C	0.0
	E	3.7
Q061	B	1.8
	C	0.0
	E	2.5
Q062	B	3.0
	C	0.0
	E	3.7
Q063	B	3.1
	C	0.0
	E	3.7
Q067	B	5.9
	C	8.9
	E	5.2
Q068	B	0.0
	C	5.2
	E	0.0
Q069	B	0.0
	C	0.1
	E	0.0
Q070	B	4.8
	C	8.7
	E	4.2
Q071	B	5.1
	C	8.8
	E	4.4



to SURROUND
from uP
I012 BA033T
MAIN TUNER
U002
V6-A30FT
PiP TUNER
U003
V8-A68FT
PINP
3D Y/C UNIT
U004 HC3152
FLEX CONTROL UNIT
U006 HC5125
YUV.SW
High:YUV(1)
Low:NTSC(2)
I013 BA7657F
I014 MC14053BCP
I008 BA17805
PST1
PST2
PST3
to TERMINAL PWB
to ANT SW BOX
to 2H VIDEO PWB
PSZ1
PSZ2

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

DP86V SIGNAL P.W.B. (2/3)

Circuit No.	Pin No.	Voltage VDC	Pin No.	Voltage VDC
I013	1	0.0	13	0.0
	2	0.0	14	0.0
	3	0.0	15	2.3
	4	0.0	16	0.0
	5	0.0	17	0.2
	6	0.0	18	2.7
	7	3.8	19	2.3
	8	0.0	20	5.2
	9	3.8	21	2.3
	10	0.0	22	0.0
	11	3.8	23	0.0
	12	0.0	24	0.0
I014	1	0.1		
	2	0.0		
	3	5.2		
	4	4.6		
	5	4.6		
	6	0.0		
	7	0.0		
	8	0.0		
	9	0.0		
	10	0.0		
	11	0.0		
	12	0.1		
	13	5.2		
	14	0.1		
	15	0.1		
	16	5.2		

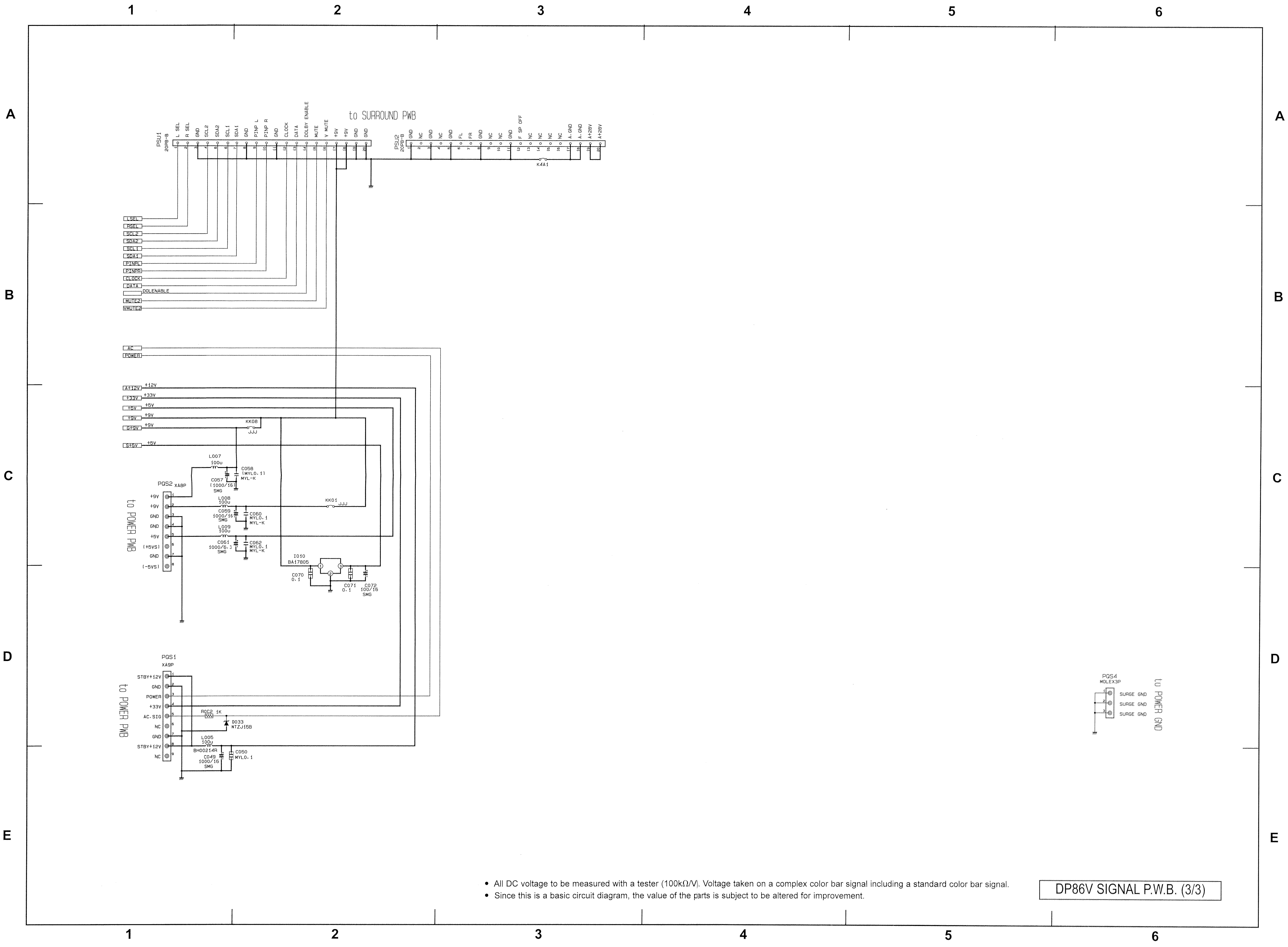
BASIC CIRCUIT DIAGRAM

SIGNAL (3/3)

2H VIDEO

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

Circuit No.	Pin No.	Voltage VDC
I010	1	5.0
	2	0.0
	3	9.0



1
2
3
4
5
6
A
B
C
D
E
to SURROUND PWB
PSU1
20PB-B
L SEL
R SEL
GND
SCL2
SDA2
SCL1
SDA1
GND
PINP L
PINP R
GND
CLOCK
DATA
DOLBY ENABLE
MUTE
V MUTE
+9V
+9V
GND
GND
PSU2
20PB-B
GND
NC
GND
NC
GND
FL
FR
GND
NC
NC
GND
F SP OFF
NC
NC
NC
NC
A.GND
A.GND
A+28V
A+28V
K4A1
LSEL
RSEL
SCL2
SDA2
SCL1
SDA1
PINPL
PINPR
CLOCK
DATA
DOLENABLE
MUTE2
VMUTE2
AC
POWER
A+12V
+12V
+33V
+33V
+5V
+5V
+9V
+9V
G+9V
+9V
S+5V
+5V
KK08
JJJ
L007
100u
C058
(MYL0.1)
MYL-K
C057
(1000/16)
SMG
PQS2 XA8P
to POWER PWB
+9V
+9V
GND
GND
+5V
(+5VS)
GND
(-5VS)
L008
100u
C059
1000/16
SMG
C060
MYL0.1
MYL-K
L009
100u
C061
1000/6.3
SMG
C062
MYL0.1
MYL-K
KK01
JJJ
I010
BA17805
C070
0.1
C071
0.1
C072
100/16
SMG
PQS1
XA9P
to POWER PWB
STBY+12V
GND
POWER
+33V
AC.SIG
NC
GND
STBY+12V
NC
R0C2 1K
D033
NTZJ15B
L005
100u
BH00214R
C049
1000/16
SMG
C050
MYL0.1
PQS4
MOLEX3P
SURGE GND
SURGE GND
SURGE GND
to POWER GND

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

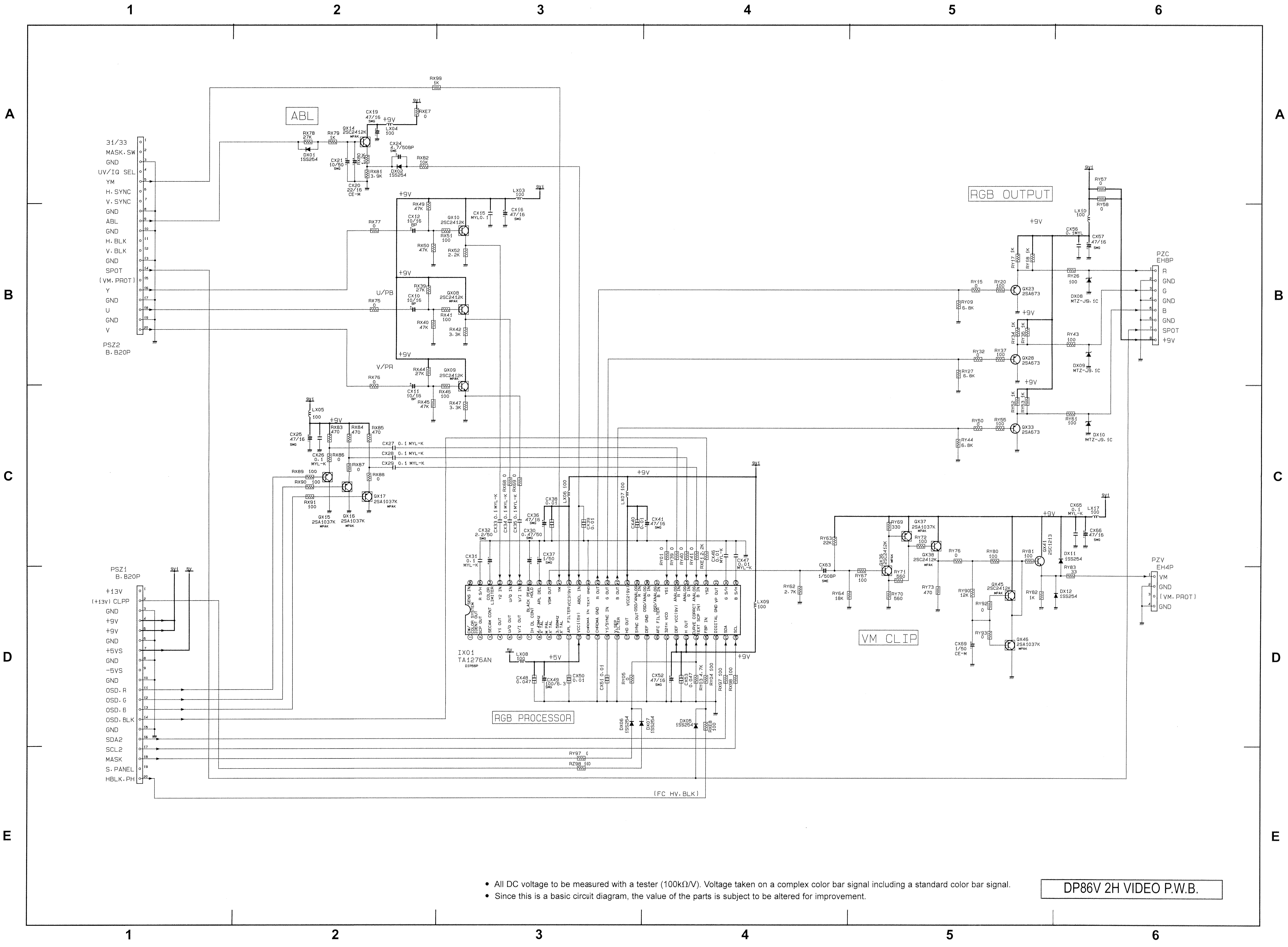
DP86V SIGNAL P.W.B. (3/3)

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

BASIC CIRCUIT DIAGRAM

SIGNAL (3/3)

2H VIDEO



1
2
3
4
5
6
A
B
C
D
E
ABL
RGB OUTPUT
RGB PROCESSOR
VM CLIP
PSZ2
B.B20P
31/33
MASK.SW
GND
UV/IQ SEL
YM
H.SYNC
V.SYNC
ABL
H.BLK
V.BLK
SPOT
[VM.PROT]
Y
U
V
PSZ1
B.B20P
+13V
(+13V) CLPP
+9V
+5VS
-5VS
OSD.R
OSD.G
OSD.B
OSD.BLK
SDA2
SCL2
MASK
S.PANEL
HBLK.PH
IX01
TA1276AN
PZC
EH8P
R
G
B
GND
SPOT
+9V
PZV
EH4P
VM
(VM.PROT)
(FC HV.BLK)
QX08
QX09
QX10
QX14
QX15
QX16
QX17
QX23
QX28
QX33
QX36
QX37
QX38
QX41
QX45
QX46
2SC2412K
2SA1037K
2SA673
MTZ-J9.1C
1SS254

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

DP86V 2H VIDEO P.W.B.

Circuit No.	Pin No.	Voltage VDC	Pin No.	Voltage VDC
IX01	1	1.6	29	4.9
	2	7.6	30	4.9
	3	5.9	31	4.9
	4	2.9	32	0.0
	5	2.4	33	3.5
	6	2.3	34	3.5
	7	1.8	35	3.5
	8	4.2	36	0.0
	9	4.3	37	3.5
	10	4.2	38	3.5
	11	1.6	39	3.5
	12	4.9	40	8.9
	13	2.4	41	2.5
	14	0.0	42	2.5
	15	2.6	43	2.5
	16	0.0	44	0.0
	17	0.0	45	6.1
	18	0.0	46	8.9
	19	0.0	47	0.0
	20	7.4	48	3.3
	21	0.0	49	5.2
	22	8.9	50	4.9
	23	8.9	51	5.0
	24	1.2	52	5.0
	25	1.4	53	6.3
	26	0.0	54	6.9
	27	3.7	55	5.1
	28	4.2	56	2.8

Circuit No.	Pin No.	Voltage VDC	Pin No.	Voltage VDC
PSZ1	1	0.0	11	0.9
	2	0.2	12	0.6
	3	0.0	13	0.6
	4	9.0	14	0.0
	5	9.0	15	0.0
	6	0.0	16	4.0
	7	5.0	17	4.1
	8	0.0	18	1.1
	9	0.0	19	0.0
	10	0.0	20	1.4
PSZ2	1	4.5	11	1.7
	2	0.0	12	-0.6
	3	0.0	13	0.0
	4	0.0	14	0.0
	5	0.0	15	0.0
	6	4.3	16	2.6
	7	4.3	17	0.0
	8	0.0	18	3.7
	9	12.5	19	0.0
	10	0.0	20	3.7

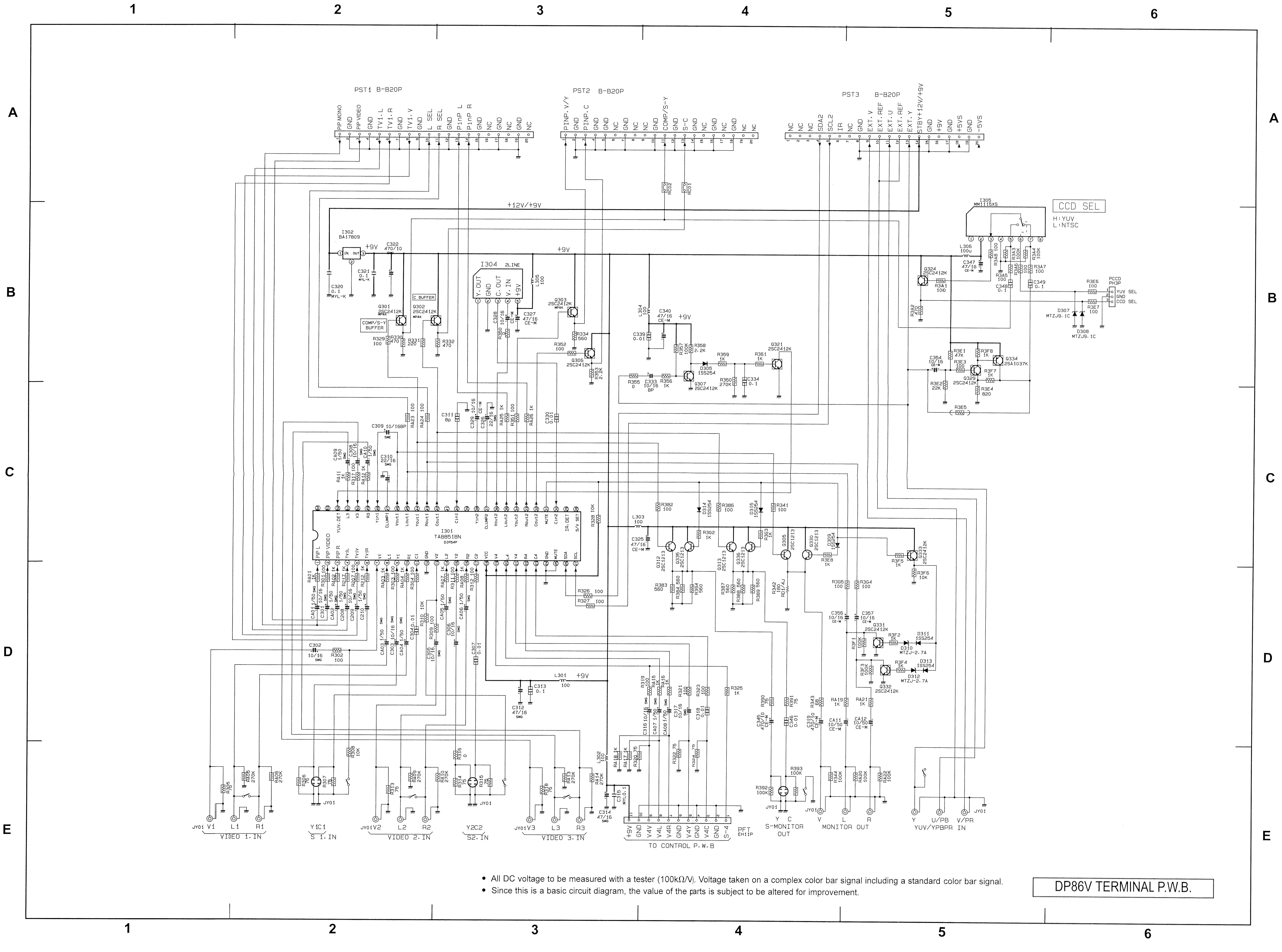
QX08	B	5.0
	C	8.9
	E	5.4
QX09	B	5.0
	C	8.9
	E	5.4
QX10	B	4.2
	C	8.9
	E	3.7
QX14	B	9.6
	C	9.0
	E	8.9
QX15	B	0.7
	C	0.0
	E	0.0
QX16	B	0.0
	C	0.0
	E	0.7
QX17	B	0.1
	C	0.0
	E	0.0
QX23	B	2.3
	C	0.0
	E	3.0
QX28	B	2.3
	C	0.0
	E	3.0
QX33	B	2.3
	C	0.0
	E	3.0
QX36	B	-0.8
	C	8.3
	E	-0.8
QX37	B	8.3
	C	5.4
	E	8.9
QX38	B	5.4
	C	8.9
	E	4.7
QX41	B	4.9
	C	8.9
	E	4.3
QX45	B	4.9
	C	8.9
	E	4.8
QX46	B	-0.8
	C	-0.8
	E	4.7

BASIC CIRCUIT DIAGRAM
TERMINAL
DEFLECTION

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

Circuit No.	Pin No.	Voltage VDC	Pin No.	Voltage VDC
I301	1	5.2	28	0.0
	2	5.2	29	0.0
	3	5.2	30	5.2
	4	5.2	31	0.2
	5	5.2	32	3.7
	6	5.2	33	4.0
	7	5.1	34	3.7
	8	5.0	35	4.0
	9	5.1	36	3.5
	10	4.9	37	3.5
	11	5.1	38	5.2
	12	0.0	39	4.0
	13	5.2	40	4.8
	14	4.9	41	4.0
	15	5.2	42	3.7
	16	5.0	43	4.0
	17	5.2	44	4.2
	18	9.0	45	4.0
	19	5.2	46	3.5
	20	5.2	47	3.5
	21	5.2	48	5.2
	22	5.2	49	5.0
	23	5.2	50	5.2
	24	0.0	51	4.8
	25	0.0	52	4.5
	26	3.6	53	4.7
	27	4.0	54	4.3
I302	1	12.0		
	2	0.0		
	3	9.1		
I304	1	6.5		
	2	0.0		
	3	4.0		
	4	5.0		
	5	9.0		
I305	1	-0.5		
	2	9.1		
	3	3.0		
	4	0.0		
	5	3.7		
	6	0.0		
	7	2.5		
	8	-0.4		

Q301	B	3.2
	C	9.1
	E	3.8
Q302	B	3.1
	C	9.1
	E	3.7
Q303	B	3.1
	C	9.1
	E	3.8
Q305	B	3.6
	C	9.0
	E	2.8
Q306	B	3.1
	C	9.1
	E	3.7
Q307	B	0.7
	C	0.0
	E	0.0
Q312	B	3.7
	C	9.0
	E	-0.6
Q313	B	3.7
	C	9.0
	E	3.1
Q321	B	-0.5
	C	4.1
	E	-0.5
Q324	B	2.5
	C	9.1
	E	1.8
Q329	B	2.9
	C	8.5
	E	2.3
Q330	B	0.2
	C	9.0
	E	2.8
Q331	B	-0.2
	C	0.0
	E	0.0
Q332	B	0.0
	C	0.0
	E	0.0
Q333	B	0.2
	C	9.0
	E	0.0
Q334	B	8.5
	C	4.5
	E	9.1


1
2
3
4
5
6
A
B
C
D
E
PST1 B-B20P
PST2 B-B20P
PST3 B-B20P
+12V/+9V
I302 BA17809
I304 2LINE
I305 MM1115XS
CCD SEL
H:YUV
L:NTSC
COMP/S-Y BUFFER
C BUFFER
I301 TA8851BN
L301 +9V
VIDEO 1.IN
S 1.IN
VIDEO 2.IN
S2.IN
VIDEO 3.IN
TO CONTROL P.W.B
S-MONITOR OUT
MONITOR OUT
YUV/YPBPR IN

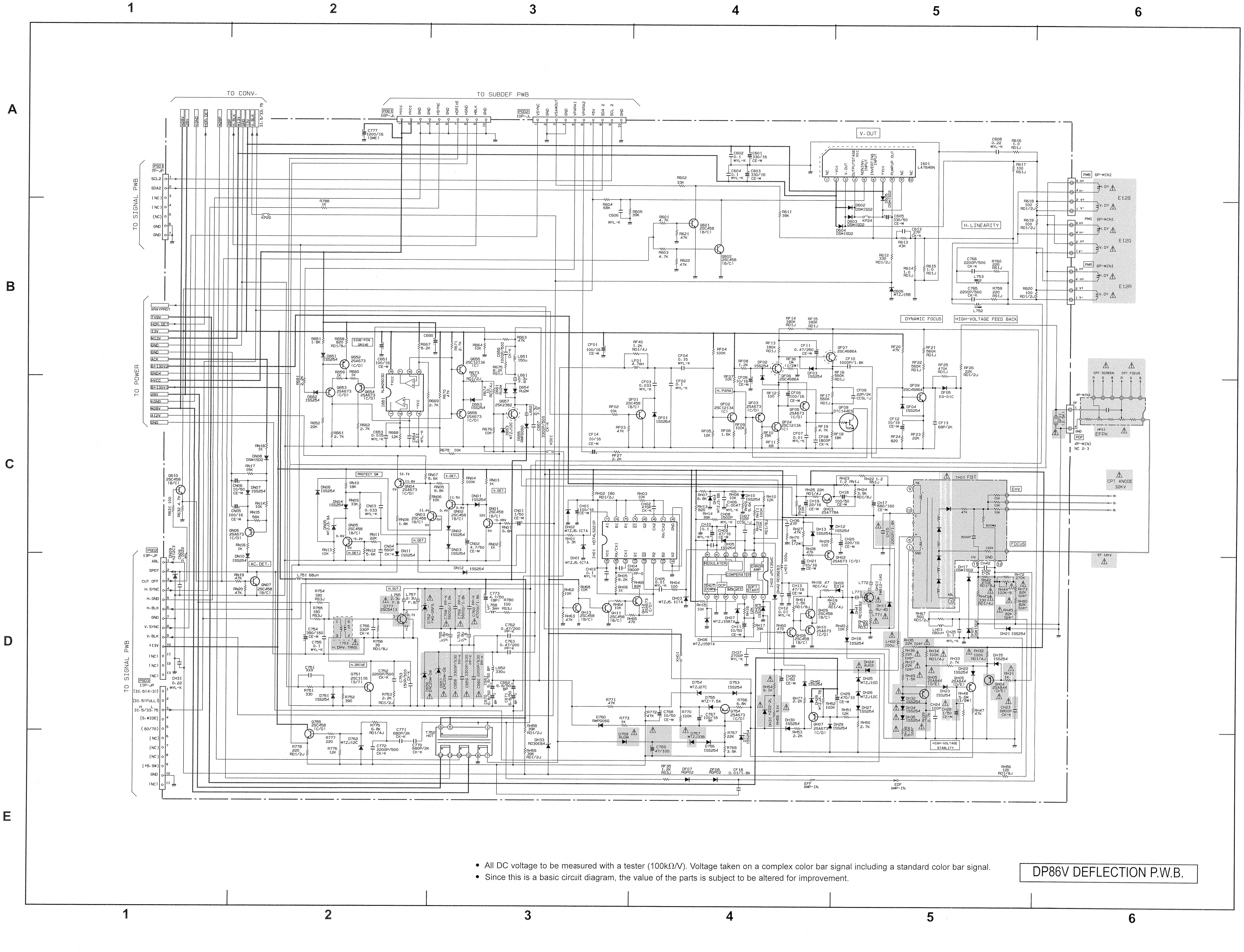
- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

DP86V TERMINAL P.W.B.

Q335	B	0.2
	C	9.0
	E	3.0
Q336	B	0.2
	C	9.0
	E	3.0

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

BASIC CIRCUIT DIAGRAM
TERMINAL
DEFLECTION


TO CONV.
TO SUBDEF PWB
TO SIGNAL PWB
TO POWER
V.OUT
H.LINEARITY
DYNAMIC FOCUS
HIGH-VOLTAGE FEED BACK
PROTECT SW
V.DET.
AC.DET.
H.OUT
H.DRIVE
H.DRV.TRANS
REGULATED
COMPARATOR
SOFT START
ERROR AMP
THD1 FBT
EHV
FOCUS
CPT ANODE 32KV
CPT SCREEN
CPT FOCUS
E12B
E12G
E12R
EFDK
HIGH-VOLTAGE STABILITY
EFF AMP-IN
EDF AMP-IN

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

DP86V DEFLECTION P.W.B.

Circuit No.	Pin No.	Voltage VDC
PDD1	1	12.1
	2	12.1
	3	0.0
	4	0.0
	5	3.8
	6	0.0
	7	2.3
	8	0.0
	9	1.7
	10	0.0
	1	4.3
	2	0.0
	3	4.9
	4	0.0
	5	7.0
	6	2.1
	7	5.0
	8	4.0
	9	4.1
	10	0.0
QF04	B	0.7
	C	11.8
	E	0.3
QF05	B	11.9
	C	0.1
	E	12.3
QF06	B	12.4
	C	406.5
	E	12.2
QF07	B	388.0
	C	992.0
	E	282.0
QF08	B	0.0
	C	6.9
	E	0.0
QF09	B	11.7
	C	391.1
	E	11.2
QH01	B	2.0
	C	127.3
	E	0.2
QH02	B	12.4
	C	-0.9
	E	12.3
QH03	B	130.0
	C	1.0
	E	130.0
QH04	B	9.8
	C	0.0
	E	10.5
QH05	B	11.6
	C	1.5
	E	12.2
QH06	B	11.3
	C	1.0
	E	10.4
QH07	B	7.7
	C	0.3
	E	7.6
QH08	B	0.5
	C	3.2
	E	0.0
QH09	B	3.2
	C	12.5
	E	3.0
QH10	B	3.2
	C	0.0
	E	3.0
QH11	B	0.0
	C	5.4
	E	0.0
QH12	B	5.3
	C	-0.7
	E	5.3
QH13	B	0.7
	C	0.0
	E	0.0
QK01	B	-12.4
	C	-5.4
	E	-12.9
QK02	B	0.0
	C	0.0
	E	0.5
QK03	B	0.0
	C	-11.4
	E	0.6
QK06	B	0.0
	C	5.0
	E	0.0
QK07	B	0.0
	C	5.0
	E	0.0
QK08	B	0.0
	C	5.0
	E	0.0
QN01	B	0.0
	C	12.2
	E	0.0
QN02	B	0.9
	C	12.1
	E	0.6
QN03	B	0.1
	C	12.1
	E	0.0
QN04	B	12.1
	C	-0.8
	E	12.1
QN05	B	-0.2
	C	0.6
	E	0.0
QN06	B	6.6
	C	-0.6
	E	6.6
QN07	B	0.0
	C	0.1
	E	0.0
Q601	B	0.0
	C	3.5
	E	0.0
Q602	B	0.0
	C	1.9
	E	0.0
Q610	B	0.0
	C	5.1
	E	0.0
Q652	B	10.6
	C	8.3
	E	11.2
Q653	B	7.0
	C	1.0
	E	7.9
Q654	B	7.0
	C	1.8
	E	7.6
Q655	B	2.8
	C	12.5
	E	2.8
Q656	B	2.8
	C	0.0
	E	2.8
Q657	B	2.6
	C	1.1
	E	0.0
Q751	B	0.5
	C	18.3
	E	0.0
Q754	B	12.4
	C	1.0
	E	6.8
Q755	B	1.1
	C	12.5
	E	1.7
Q777	B	0.0
	C	113.3
	E	0.0
QF01	B	0.5
	C	-0.1
	E	0.0
QF02	B	1.3
	C	6.7
	E	6.8
QF03	B	7.0
	C	0.9
	E	7.1
Q701	B	0.4
	C	2.3
	E	0.0

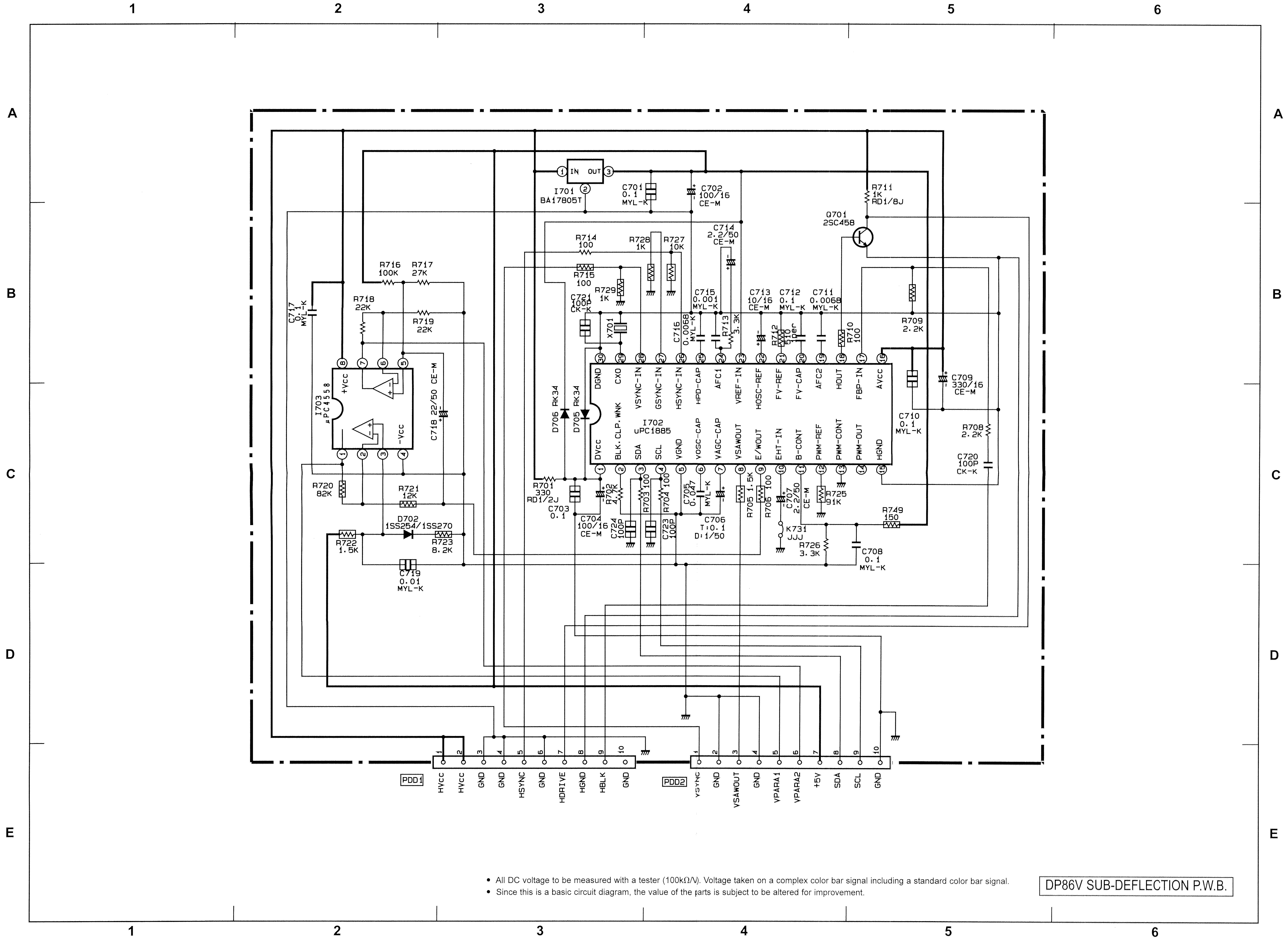
BASIC CIRCUIT DIAGRAM
SUB-DEFLECTION
POWER SUPPLY

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

Circuit No.	Pin No.	Voltage VDC
I701	1	12.1
	2	0.0
	3	5.0

Circuit No.	Pin No.	Voltage VDC	Pin No.	Voltage VDC
I702	1	2.4	16	12.1
	2	0.1	17	0.0
	3	1.2	18	0.4
	4	4.1	19	6.9
	5	0.0	20	2.2
	6	4.0	21	0.8
	7	5.4	22	1.3
	8	4.9	23	5.0
	9	3.8	24	4.3
	10	5.0	25	3.4
	11	4.7	26	3.8
	12	5.0	27	1.1
	13	0.0	28	4.0
	14	12.0	29	0.4
	15	0.0	30	0.0

Circuit No.	Pin No.	Voltage VDC
I703	1	7.9
	2	4.3
	3	4.3
	4	0.0
	5	1.0
	6	1.0
	7	2.1
	8	12.1



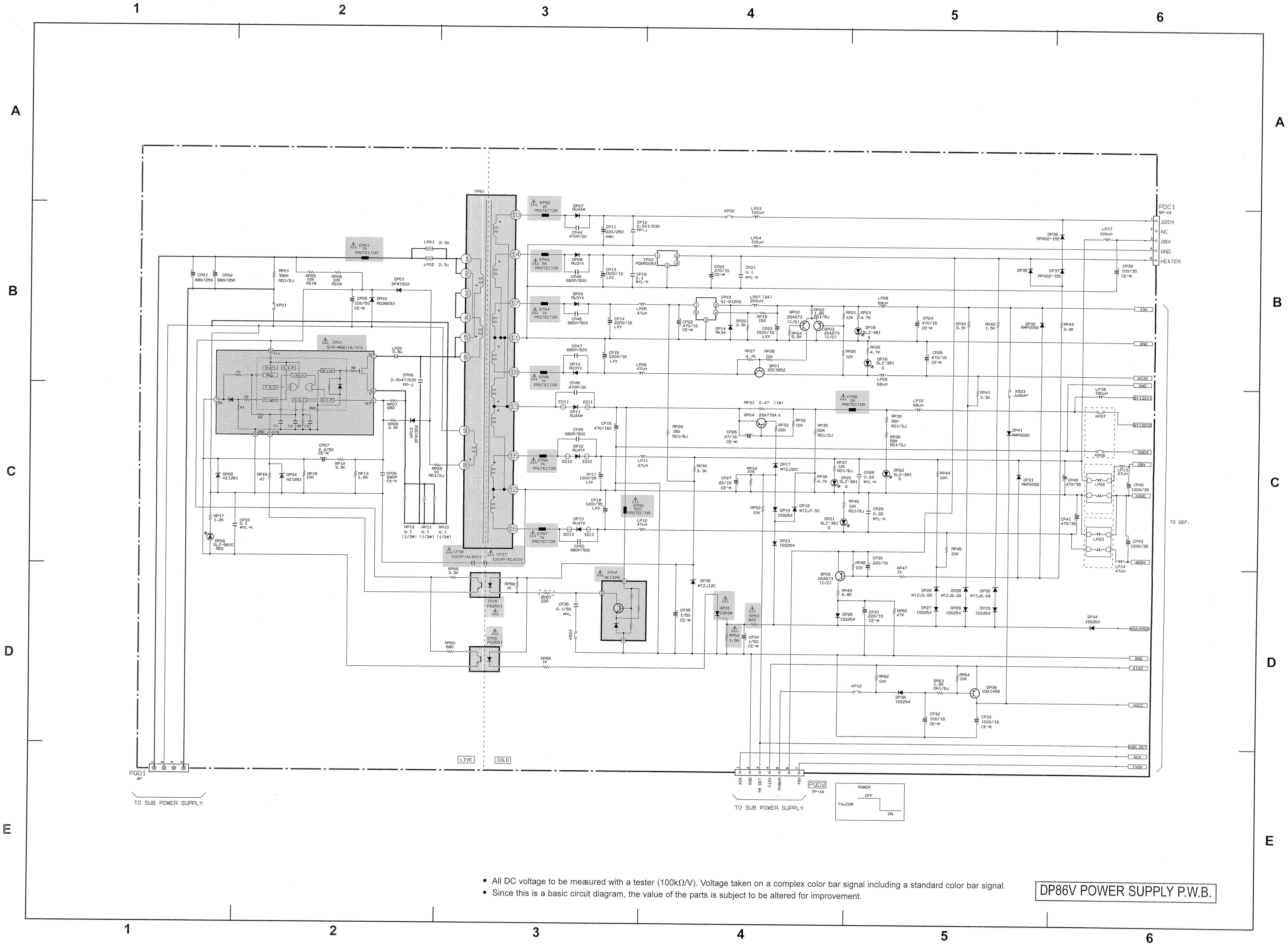
1
2
3
4
5
6
A
B
C
D
E
IN
OUT
I701
BA17805T
C701
0.1
MYL-K
C702
100/16
CE-M
R711
1K
RD1/8J
Q701
2SC458
C714
2.2/50
CE-M
R714
100
R728
1K
R727
10K
R715
100
R729
1K
C721
100P
CK-K
X701
C716
0.0068
MYL-K
C715
0.001
MYL-K
R713
3.3K
C713
10/16
CE-M
C712
0.1
MYL-K
C711
0.0068
MYL-K
R712
510
1per
R710
100
R709
2.2K
C709
330/16
CE-M
C710
0.1
MYL-K
R708
2.2K
C720
100P
CK-K
R716
100K
R717
27K
R718
22K
R719
22K
C717
0.1
MYL-K
I703
μPC4558
+Vcc
-Vcc
C718 22/50 CE-M
R720
82K
R721
12K
D702
1SS254/1SS270
R722
1.5K
R723
8.2K
C719
0.01
MYL-K
D706 RK34
D705 RK34
I702
uPC1885
DGND
CXO
VSYNC-IN
GSYNC-IN
HSYNC-IN
HPD-CAP
AFC1
VREF-IN
HOSC-REF
FV-REF
FV-CAP
AFC2
HOUT
FBP-IN
AVcc
DVcc
BLK.CLP.WNK
SDA
SCL
VGND
VOSC-CAP
VAGC-CAP
VSAWOUT
E/WOUT
EHT-IN
B-CONT
PWM-REF
PWM-CONT
PWM-OUT
HGND
R701
330
RD1/2J
C703
0.1
C704
100/16
CE-M
R702
4.7K
C724
100P
R703 100
R704 100
C723
100P
C705
0.047
MYL-K
C706
T:0.1
D:1/50
R705 1.5K
R706 100
C707
2.2/50
CE-M
K731
JJJ
R725
91K
R726
3.3K
C708
0.1
MYL-K
R749
150
PDD1
HVcc
HVcc
GND
GND
HSYNC
GND
HDRIVE
HGND
HBLK
GND
PDD2
VSYNC
GND
VSAWOUT
GND
VPARA1
VPARA2
+5V
SDA
SCL
GND

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

DP86V SUB-DEFLECTION P.W.B.

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

BASIC CIRCUIT DIAGRAM
SUB-DEFLECTION
POWER SUPPLY


1
2
3
4
5
6
A
B
C
D
E
TP91
EP91 7K PROTECTOR
EP92 4K PROTECTOR
EP93 5K PROTECTOR
EP94 7K PROTECTOR
EP95 7K PROTECTOR
EP96 7K PROTECTOR
EP97 7K PROTECTOR
LP01 2.3u
LP02 2.3u
CP01 680/250
CP02 680/250
RP01 390K RD1/2J
RP05 10K RS1W
RP06 10K RS1W
DP01 DFM1SD2
CP05 100/50 CE-M
DP02 RD36EB3
KP01
IP01 STR-M6811A/31A
Vin
Start
O.V.P
Reg.
Latch
Drive
T.S.O
Triger
O.S.C
O.C.P
SS
GND
F/B
OCP
LP20 0.8u
CP06 0.0047/630 PP-J
RP07 680
RP08 3.3K
DP03 DFM1SD2
CP07 2.2/50 CE-M
RP14 3.3K
RP13 1.5K
CP08 680P CK-K
RP09 10 RD1/2J
DP05 HZ12B1
RP16 47
DP04 HZ12B1
RP15 10K
RP17 1.2K
CP10 0.1 MYL-K
DP06 SLZ-981C RED
RP12 0.1 (1/2W)
RP11 0.1 (1/2W)
RP10 0.1 (1/2W)
CP38 1000P/AC400V
CP37 1000P/AC400V
RP59 3.3K
RP58 1K
RP57 220
IP05 PS2501
IP06 PS2501
IP04 SE130N
DP39 MTZJ12C
QP05 03P2M
RP53 820
RP54 1.5K
CP34 1/50 CE-M
DP23 1SS254
RP45 22K
RP48 10K
CP30 220/16
RP47 1K
QP06 2SA673 (C/D)
RP49 6.8K
DP25 1SS254
CP31 220/16 CE-M
RP50 47K
DP26 MTZJ3.0B
DP28 MTZJ6.2A
DP32 MTZJ6.2A
DP27 1SS254
DP29 1SS254
DP33 1SS254
DP34 1SS254
RP62 10K
KP12
DP38 1SS254
RP63 1.5K DR1/8J
RP64 10K
QP08 2SA1488
CP32 100/16 CE-M
CP33 1000/16 CE-M
PDC1 5P-XA
220V
NC
28V
GND
HEATER
LP17 100uH
DP36 RPG02-15E
DP35
DP37 RPG02-15E
CP39 100/35 CE-M
13V
GND
M13V
GND
B+130V1
B+130V2
GND4
28V
KGND
M28V
XRAYPRO
GND
A12V
HVCC
HOR.DET
ACK
TV9V
DP30 RMPG06G
RP43 2.2K
K523 Jumper
LP18 180uH
KP07
KP06
DP41 RMPG06D
DP31 RMPG06G
CP40 470/35
CP41 470/35
LP22
LP23
LP13 27uH
LP14 47uH
CP42 1200/35
CP43 1200/35
TO DEF.
LIVE
COLD
PQD1 4P
TO SUB POWER SUPPLY
PQD2 7P-XA
ACK
GND
+B DET
+12V
POWER
+9V
TO SUB POWER SUPPLY
POWER
OFF
TVuCOM
ON

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

DP86V POWER SUPPLY P.W.B.

Circuit No.	Pin No.	Voltage VDC
IP01	1	61.1
	2	-59.2
	3	-59.3
	4	-62.8
	5	-41.9
	6	-58.8
	7	-57.8
IP02	1	7.3
	2	6.3
	3	0.0
	4	2.5
IP03	1	14.7
	2	12.7
	3	0.0
	4	11.9
	5	2.2
IP04	1	130.3
	2	11.2
	3	0.0
IP05	1	12.4
	2	11.4
	3	-58.5
	4	-52.0
IP06	1	12.5
	2	12.0
	3	-57.0
	4	-41.8

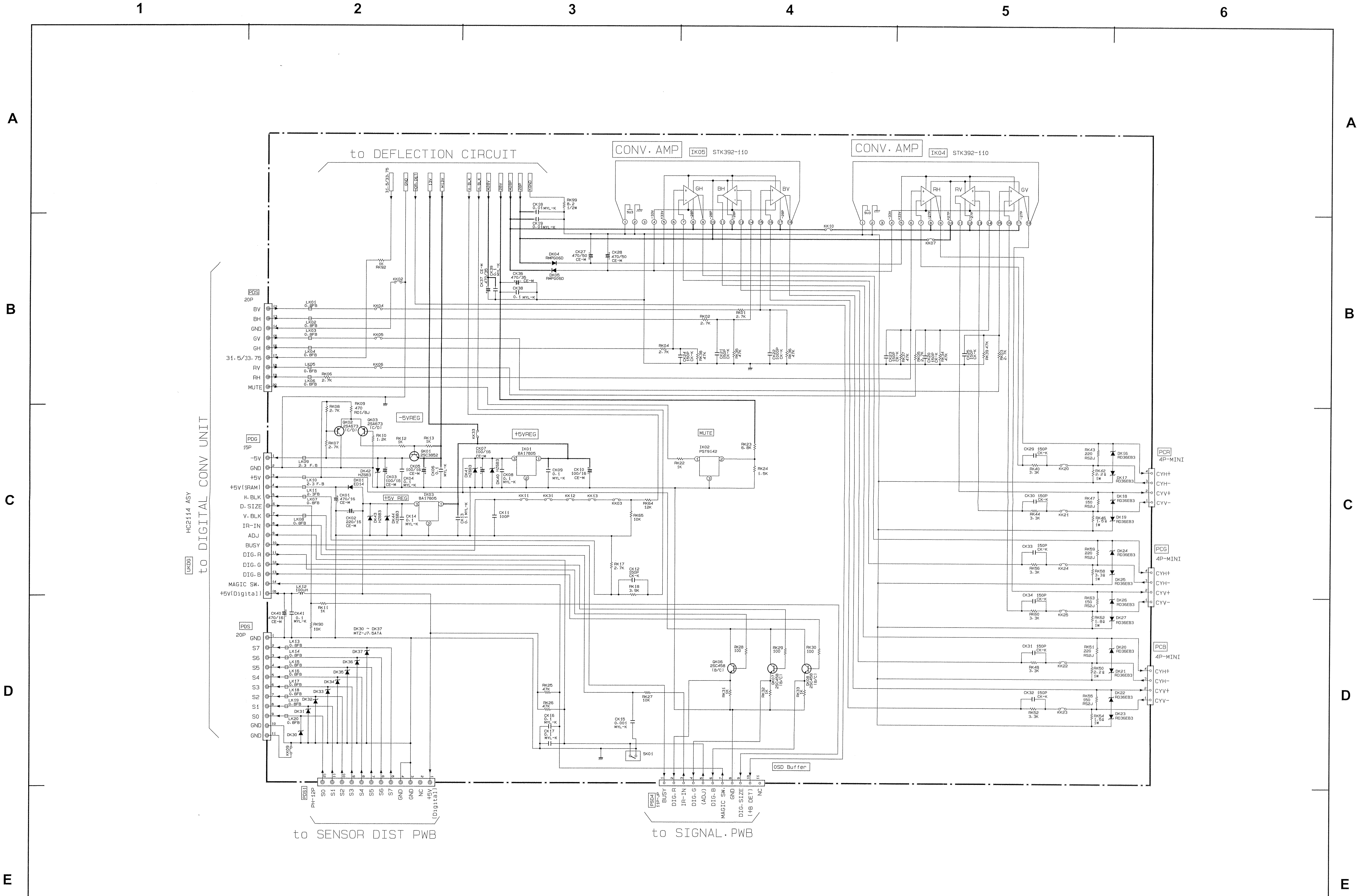
QP01	B	-14.0
	C	-13.2
	E	-14.7
QP02	B	0.1
	C	-7.1
	E	0.6
QP03	B	0.0
	C	0.0
	E	0.6
QP04	B	129.9
	C	1.1
	E	130.3
QP05	B	0.0
	C	12.0
	E	0.3
QP06	B	6.3
	C	0.0
	E	6.3
QP08	B	11.4
	C	12.1
	E	12.1

BASIC CIRCUIT DIAGRAM
CONVERGENCE
PRINTED CIRCUIT BOARD
SIGNAL P.W.B.

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

Circuit No.	Pin No.	Voltage VDC
IK01	1	9.4
	2	0
	3	4.9
IK02	1	4.4
	2	6.6
	3	0
IK03	1	9.4
	2	0
	3	5.1
IK04	1	0
	2	0
	3	-29.2
	4	-30.3
	5	31.7
	6	-0.1
	7	-0.1
	8	-25.9
	9	-0.1
	10	26.8
	11	-0.6
	12	-25.9
	13	-0.4
	14	-0.5
	15	-0.4
	16	-0.4
	17	-25.9
	18	-0.5
IK05	1	0
	2	0
	3	-29.2
	4	-30.3
	5	31.7
	6	-0.2
	7	-0.2
	8	-26.0
	9	-0.3
	10	26.8
	11	-0.5
	12	-26.0
	13	-0.4
	14	-0.4
	15	-0.4
	16	-0.4
	17	-26.0
	18	-0.5

Circuit No.	Pin No.	Voltage VDC
QK01	B	-12.0
	C	-5.2
	E	-12.6
QK02	B	0
	C	0
	E	0.5
QK03	B	0
	C	-11.4
	E	0.6
QK06	B	0
	C	4.9
	E	0
QK07	B	0
	C	4.9
	E	0
QK08	B	0
	C	4.9
	E	0


1
2
3
4
5
6
A
B
C
D
E
to DEFLECTION CIRCUIT
CONV. AMP
IK05 STK392-110
CONV. AMP
IK04 STK392-110
GH
BH
BV
RH
RV
GV
PD3
20P
BV
BH
GND
GV
GH
31.5/33.75
RV
RH
MUTE
PD6
15P
-5V
GND
+5V
+5V(SRAM)
H-BLK
D-SIZE
V-BLK
IR-IN
ADJ
BUSY
DIG.R
DIG.G
DIG.B
MAGIC SW.
+5V(Digital)
PD5
20P
GND
S7
S6
S5
S4
S3
S2
S1
S0
GND
GND
HC2114 A5Y
PD0
to DIGITAL CONV UNIT
-5VREG
+5VREG
+5V REG
MUTE
IK01 BA17805
IK02 PST9142
IK03 BA17805
QK01 2SC3852
PCR 4P-MINI
PCG 4P-MINI
PCB 4P-MINI
CYH+
CYH-
CYV+
CYV-
OSD Buffer
PD4
PH-12P
S0
S1
S2
S3
S4
S5
S6
S7
GND
GND
NC
+5V (Digital)
to SENSOR DIST PWB
BUSY
DIG.R
IR-IN
DIG.G
(ADJ)
DIG.B
MAGIC SW.
GND
DIG.SIZE
(HB DET)
NC
to SIGNAL.PWB
SK01

XXX: NO ASSEMBLY

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

DP86V CONVERGENCE P.W.B.

1 2 3 4 5 6

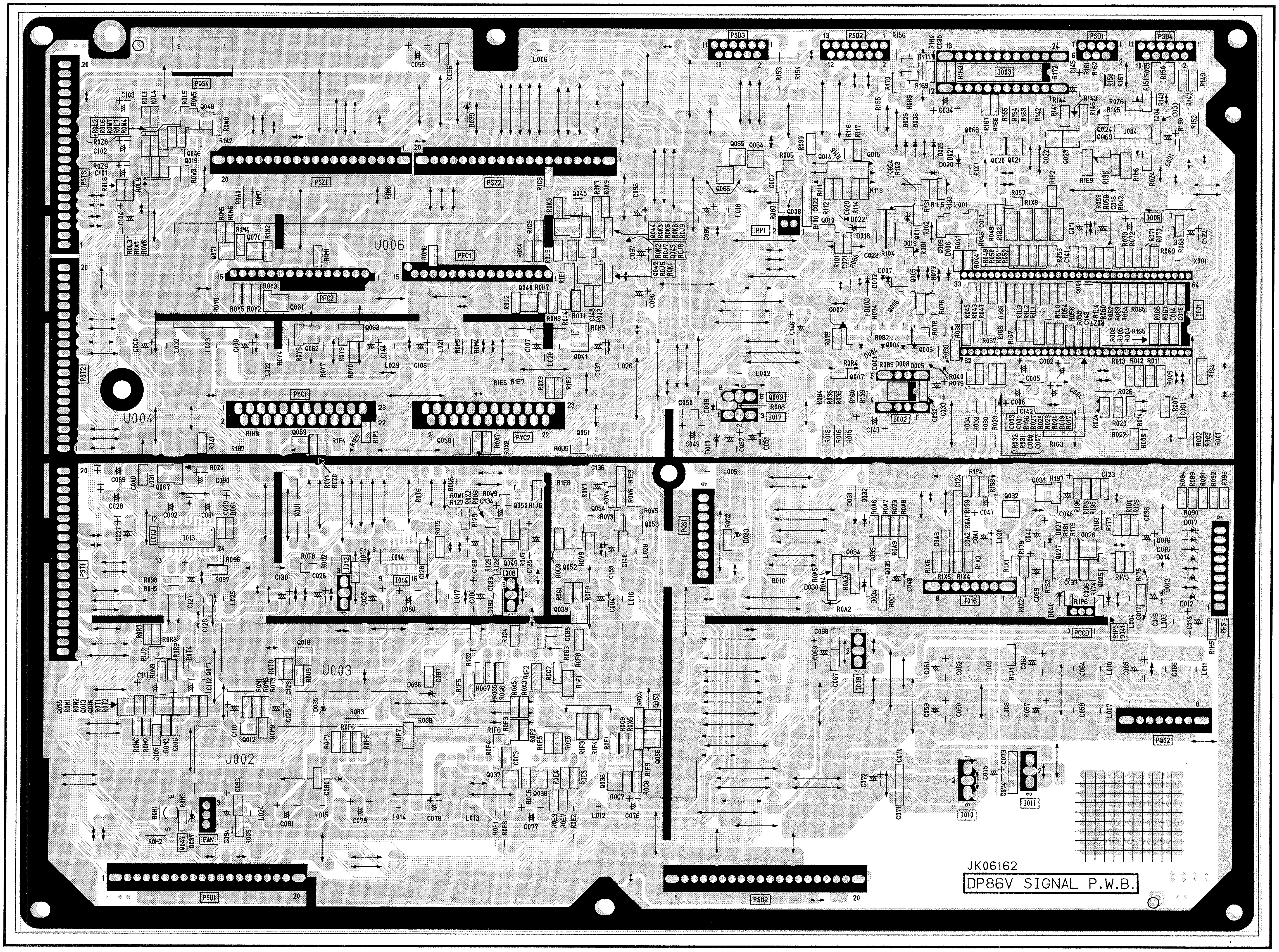
BASIC CIRCUIT DIAGRAM

CONVERGENCE

PRINTED CIRCUIT BOARD

SIGNAL P.W.B.

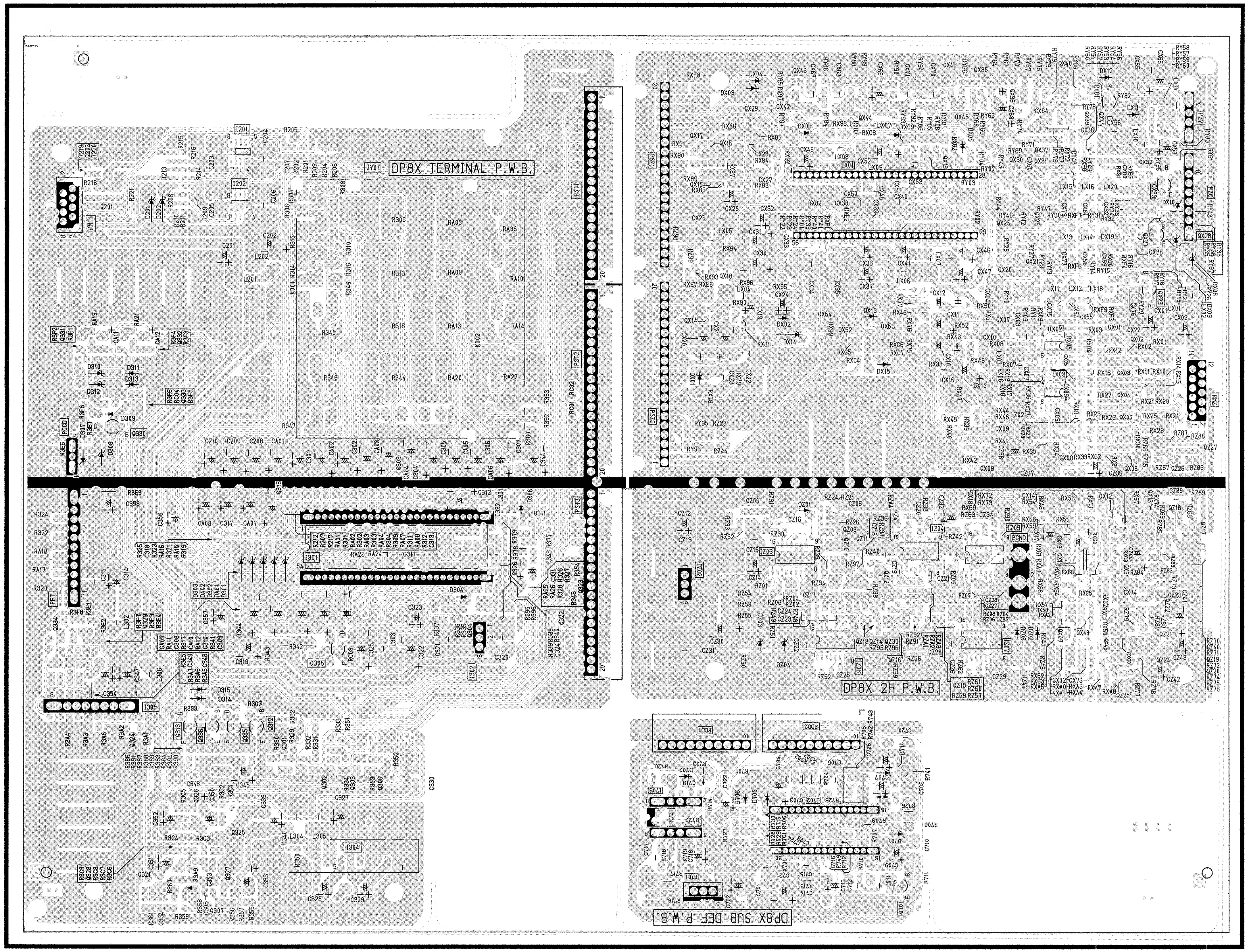
SIGNAL P.W.B.



PSD3
PSD2
PSD1
PSD4
PQS4
PSZ1
PSZ2
PFC1
PFC2
PYC1
PYC2
PST3
PST2
PST1
PSU1
PSU2
PQS1
PQS2
PCCD
PFS
PP1
U006
U004
U003
U002
I001
I002
I003
I004
I005
I008
I009
I010
I011
I012
I013
I014
I016
I017
EAN
X001
JK06162
DP86V SIGNAL P.W.B.

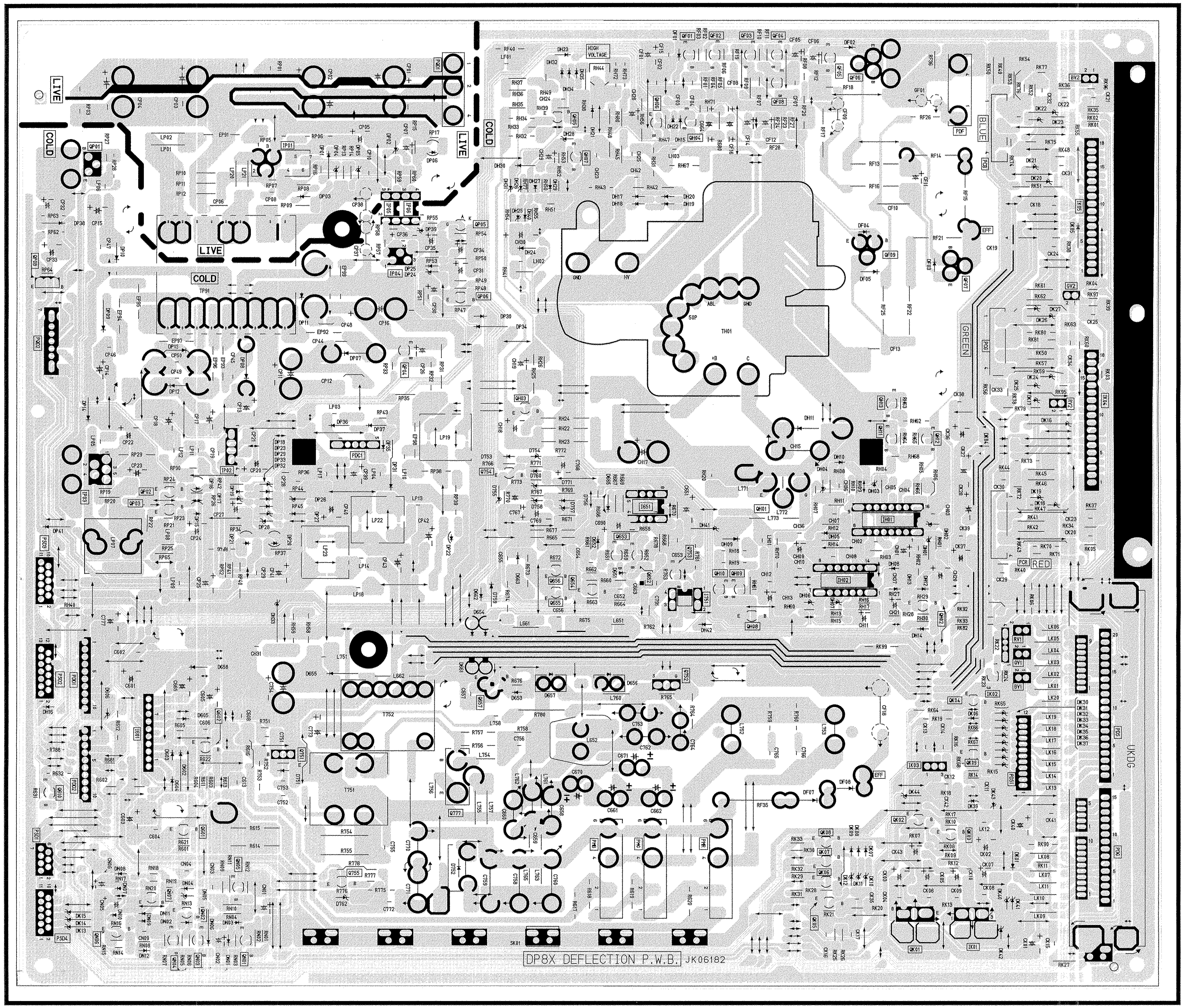
PRINTED CIRCUIT BOARD

TERMINAL P.W.B.


DP8X TERMINAL P.W.B.
JY01
DP8X 2H P.W.B.
DP8X SUB DEF P.W.B.
PST1
PST2
PST3
PCCD
PFT
PHT1
PDD1
PDD2
I201
I202
I301
I302
I304
I305
I306
IX01
IZ01
IZ03
IZ04
IZ05
I701
I702
I703
IX02
IX03

PRINTED CIRCUIT BOARD

POWER/DEFLECTION P.W.B.


LIVE
COLD
LIVE
COLD
LIVE
COLD
HIGH VOLTAGE
BLUE
GREEN
RED
UKDG
DP8X DEFLECTION P.W.B.
JK06182

REPLACEMENT PARTS LIST

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ABBREVIATIONS

Capacitors:

- CD: Ceramic Disc
- PF: Polyester Film
- EL: Electrolytic
- PP: Polypropylene
- PR: Paper
- TA: Tantalum
- TM: Trimmer
- MC: Mylar

Resistors:

- CF: Carbon Film
- CC: Carbon Composition
- MF: Metal Oxide Film
- VR: Variable Resistor
- WW: Wire Wound
- FR: Fuse Resistor
- MG: Metal Glaze

Semiconductors:

- TR: Transistor
- DI: Diode
- ZD: Zener Diode
- VA: Varistor
- TH: Thermistor
- IC: Integrated Circuit

SYMBOL NO.	PART NO.	PART DESCRIPTION
		CAPACITORS
C001	0228060R	CAP 2125 CHIP 180PF-J CH 50V TAPE
C002	0800277R	CAP.-ELECTORO. 0.47UF-M 50V
C003	0228066R	CAP MINI-CHIP 330PF-J CH 50V TAPE
C004	0800277R	CAP.-ELECTORO. 0.47UF-M 50V
C005	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V
C006	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V
C007	0893035R	CAP2125CHIP 2200PFKB 50V TAPE
C008	0893035R	CAP2125CHIP 2200PFKB 50V TAPE
C009	0228042R	CAP 2125CHIP 33PFJCH 50V TAPE
C010	0228042R	CAP 2125CHIP 33PFJCH 50V TAPE
C011	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V
C012	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C013	0893044R	CAP2125CHIP 10000PFKB 50V TAPE
C014	0228042R	CAP 2125CHIP 33PFJCH 50V TAPE
C015	0228042R	CAP 2125CHIP 33PFJCH 50V TAPE
C016	0800326R	CAP.-ELECTRO. 100UF-M 16V
C017	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE
C018	0800326R	CAP.-ELECTRO. 100UF-M 16V
C021	0228054R	CAP 2125 CHIP 100PFJCH 50V TAPE
C022	0228076R	CAP MINI-CHIP 820PF-J CH 50V TAPE
C023	0228054R	CAP 2125 CHIP 100PFJCH 50V TAPE
C024	0228058R	CAP 2125 CHIP 150PF-J CH 50V TAPE
C025	0800315R	CAP.-ELECTRO. 47UF-M(SMG) 6.3V
C026	0800315R	CAP.-ELECTRO. 47UF-M(SMG) 6.3V
C027	0284667R	CAP.-ELECTRO. 47UF-MBPR(SME)16V
C028	0284667R	CAP.-ELECTRO. 47UF-MBPR(SME)16V
C029	0893035R	CAP2125CHIP 2200PFKB 50V TAPE
C030	0893053R	CAP2125CHIP 47000PFKB 50V TAPE
C031	0800326R	CAP.-ELECTRO. 100UF-M 16V
C032	0893053R	CAP2125CHIP 47000PFKB 50V TAPE
C033	0800326R	CAP.-ELECTRO. 100UF-M 16V
C034	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
C035	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE
C037	0893031R	CAP 2125CHIP 1000PFKB 50V TAPE
C038	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C048	0800326R	CAP.-ELECTRO. 100UF-M 16V
C049	0800361N	CAP.-ELECTRO 1000UF 16V
C050	0893044R	CAP2125CHIP 10000PFKB 50V TAPE
C051	0800326R	CAP.-ELECTRO. 100UF-M 16V
C052	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C053	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C059	0800361N	CAP.-ELECTRO 1000UF 16V
C060	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
C061	0800358R	CAP.-ELECTRO. 1000UF-M 6.3V
C062	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
C070	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE
C071	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE
C072	0800326R	CAP.-ELECTRO. 100UF-M 16V
C076	0800326R	CAP.-ELECTRO. 100UF-M 16V
C077	0800361N	CAP.-ELECTRO 1000UF 16V
C078	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C079	0800358R	CAP.-ELECTRO. 1000UF-M 6.3V
C080	0893053R	CAP2125CHIP 47000PFKB 50V TAPE
C081	0800361N	CAP.-ELECTRO 1000UF 16V
C082	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE
C083	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE
C084	0800326R	CAP.-ELECTRO. 100UF-M 16V
C085	0228070R	CAP MINI-CHIP 470PF-J CH 50V TAPE
C086	0800358R	CAP.-ELECTRO. 1000UF-M 6.3V
C087	0893053R	CAP2125CHIP 47000PFKB 50V TAPE
C088	0800361N	CAP.-ELECTRO 1000UF 16V
C089	0284667R	CAP.-ELECTRO. 47UF-MBPR(SME)16V
C090	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
C091	0284667R	CAP.-ELECTRO. 47UF-MBPR(SME)16V	C304	0893044R	CAP2125CHIP 10000PFKB 50V TAPE
C092	0284667R	CAP.-ELECTRO. 47UF-MBPR(SME)16V	C305	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C093	0893053R	CAP2125CHIP 47000PFKB 50V TAPE	C306	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C094	0800326R	CAP.-ELECTRO. 100UF-M 16V	C307	0893044R	CAP2125CHIP 10000PFKB 50V TAPE
C095	0800326R	CAP.-ELECTRO. 100UF-M 16V	C308	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C096	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	C309	0284638R	CAP.-ELECTRO. 10UF-SME(BP) 16V
C097	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	C310	0800299R	CAP.-ELECTRO. 22UF-M(SMG) 16V
C098	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	C311	0228008R	CAP 2125 CHIP 8PF-C CH 50V TAPE
C099	0228070R	CAP MINI-CHIP 470PF-J CH 50V TAPE	C312	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
C0A0	0228738R	CAP2125CHIP 22PFJSL 50V TAPE	C313	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE
C0A1	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V	C314	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
C0A2	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE	C315	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
C0A3	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE	C316	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C0C0	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V	C317	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C0C1	0893044R	CAP2125CHIP 10000PFKB 50V TAPE	C318	0893044R	CAP2125CHIP 10000PFKB 50V TAPE
C0C2	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE	C319	0800352R	CAP.-ELECTRO.470UF 10V
C0C3	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE	C320	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
C101	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	C321	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
C102	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	C322	0800352R	CAP.-ELECTRO.470UF 10V
C103	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	C325	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
C104	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V	C326	0800299R	CAP.-ELECTRO. 22UF-M(SMG) 16V
C105	0893033R	CAP 2125CHIP 1500PFKB 50V TAPE	C327	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
C106	0228070R	CAP MINI-CHIP 470PF-J CH 50V TAPE	C328	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C107	0800326R	CAP.-ELECTRO. 100UF-M 16V	C329	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C108	0800326R	CAP.-ELECTRO. 100UF-M 16V	C330	0893044R	CAP2125CHIP 10000PFKB 50V TAPE
C109	0800326R	CAP.-ELECTRO. 100UF-M 16V	C333	0284638R	CAP.-ELECTRO. 10UF-SME(BP) 16V
C110	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	C334	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE
C111	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	C339	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE
C122	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	C340	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
C126	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE	C345	0800352R	CAP.-ELECTRO.470UF 10V
C127	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V	C346	0893044R	CAP2125CHIP 10000PFKB 50V TAPE
C128	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE	C347	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
C133	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	C348	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE
C134	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	C349	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE
C135	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	C354	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C136	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	C356	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C137	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V	C357	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C138	0800351R	CAP.-ELECTRO. 470UF-M 6.3V	C601	0800344R	CAP.-ELECTRO. 330UF-M(SMG) 16V
C139	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V	C602	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
C140	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE	C603	0800344R	CAP.-ELECTRO. 330UF-M(SMG) 16V
C141	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE	C604	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
C142	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE	C605	0800347N	CAP.-ELECTRO. 330UF-M(SMG) 50V
C143	0893044R	CAP2125CHIP 10000PFKB 50V TAPE	C606	AN00611R	CAP.POLYSTYLENE 0.001UF 50V TAPE
C144	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V	C608	0880198R	CAP.-PLOY. 0.22UF-J 50V
C145	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	C613	0890066R	CAP.CERAMIC 27PF-J 50V
C146	0800324R	CAP.-ELECTRO. 100UF-M(SMG) 6.3V	C651	0800361N	CAP.-ELECTRO 1000UF 16V
C147	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	C653	AN00626R	CAP.POLYESTER 0.015UF 50V TAPE
C148	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE	C654	AN00624R	CAP.POLYESTER 0.01UF 50V TAPE
C208	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	C656	0244501R	CAP.-CERAMIC 1000PF-K 500V
C209	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	C657	0244507R	CAP.-CERAMIC 3300PF-KB B 500V
C210	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	⚠ C658	0299975F	CAP-POLYPROPYLENE 0.0033MF 630V
C301	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	⚠ C659	0299975F	CAP-POLYPROPYLENE 0.0033MF 630V
C302	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	⚠ C660	0299978F	CAP-POLYPROPYLENE 0.0056UF-J 630V
C303	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	C661	0259471	CAP.-ELECTRO 6.8UF-M (BP) 50V

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
C662	0259471	CAP.-ELECTRO 6.8UF-M (BP) 50V	CA10	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V
C670	0259471	CAP.-ELECTRO 6.8UF-M (BP) 50V	CA11	0800294R	CAP.-ELECTRO. 10UF-M(SMG) 50V
C671	0259471	CAP.-ELECTRO 6.8UF-M (BP) 50V	CA12	0800294R	CAP.-ELECTRO. 10UF-M(SMG) 50V
C701	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE	CF01	0800326R	CAP.-ELECTRO. 100UF-M 16V
C702	0800326R	CAP.-ELECTRO. 100UF-M 16V	CF02	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
C703	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE	CF03	AN00631R	CAP.POLYESTER 0.033UF 50V TAPE
C704	0800326R	CAP.-ELECTRO. 100UF-M 16V	CF04	0880196R	CAP.-POLYESTER 0.15UF 50V HFT
C705	AN00633R	CAP.POLYESTER 0.047UF 50V TAPE	CF05	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C706	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CF06	0800326R	CAP.-ELECTRO. 100UF-M 16V
C707	0800282R	CAP.-ELECTORO. 2.2UF-M(SMG) 50V	CF07	AN00624R	CAP.POLYESTER 0.01UF 50V TAPE
C708	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CF08	AN00614R	CAP.POLYESTER 0.0018UF 50V TAPE
C709	0800344R	CAP.-ELECTRO. 330UF-M(SMG) 16V	CF09	0245156	CAPACITOT CERAMIC 22PF/2KV
C710	0893027R	CAP 2125 CHIP 100000PF-K B 25V TAPE	CF10	AN01111F	METALLIZ PP FILM CAPACITOR0.001UF
C711	AN00622R	CAP.POLYESTER 0.0068UF 50V TAPE	CF11	0255520R	CAP.-ELECTRO 0.47UF 250V(KME)
C712	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CF12	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C713	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V	CF13	0245158	CAPACITOT CERAMIC 68PF/2KV
C714	0800282R	CAP.-ELECTORO. 2.2UF-M(SMG) 50V	CF14	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C715	AN00611R	CAP.POLYSTYLENE 0.001UF 50V TAPE	CF18	AN01137F	METALLIZ PP FILM CAPACITOR0.01UF
C716	0893042R	CAP 2125CHIP 6800PFKB 50V TAPE	CH01	0800326R	CAP.-ELECTRO. 100UF-M 16V
C717	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CH02	0249093R	CAPACITOR-CERAMIC 470PF-J SL 50WV
C718	0800303R	CAP.-ELECTRO. 22UF-M 50V	CH03	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
C719	0893044R	CAP2125CHIP 10000PFKB 50V TAPE	CH04	0299015R	CAP.-POLY. 3900PF-G 100V
C720	0890074R	CAP.-CERAMIC 100PF-J 50V	CH05	AN00624R	CAP.POLYESTER 0.01UF 50V TAPE
C721	0228054R	CAP 2125 CHIP 100PFJCH 50V TAPE	CH06	AN00619R	CAP.POLYESTER 0.0047UF 50V TAPE
C723	0228054R	CAP 2125 CHIP 100PFJCH 50V TAPE	CH07	0890074R	CAP.-CERAMIC 100PF-J 50V
C724	0228054R	CAP 2125 CHIP 100PFJCH 50V TAPE	CH08	AN00613R	CAP.POLYESTER 0.0015UF 50V TAPE
C752	0244505R	CAP-CERAMIC 0.0022UF-K 500V	CH09	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
C753	0243503R	CAP.-CERAMIC 150PF-K B 500V	CH10	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
C754	0251703	CAP.ELECTRO 390UF-M 160V(KMH)	CH11	0800294R	CAP.-ELECTRO. 10UF-M(SMG) 50V
C755	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CH12	AN00624R	CAP.POLYESTER 0.01UF 50V TAPE
C756	0890081R	CAP.-CERAMIC 330PF 50V	CH13	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
⚠ C758	AN01131F	METALLIZ PP FILM CAPACITOR0.0056UF	⚠ CH15	AN01119F	METALLIZ PP FILM CAPACITOR0.0022UF
⚠ C759	AN01131F	METALLIZ PP FILM CAPACITOR0.0056UF	CH17	0251709	CAP.ELECTRO 680UF 160V (KMH)
⚠ C760	AN01128F	METALLIZ PP FILM CAPACITOR0.0047UF	CH18	0800329R	CAP.-ELECTRO. 100UF-M(SMG) 50V
C762	AN01178F	METALLIZ PP FILM CAPACITOR 0.47UF	CH19	0800299R	CAP.-ELECTRO. 22UF-M(SMG) 16V
C763	AN01178F	METALLIZ PP FILM CAPACITOR 0.47UF	CH20	0800335R	CAP.-ELECTRO. 220UF-M(SMG) 16V
C765	0244505R	CAP-CERAMIC 0.0022UF-K 500V	CH21	0800291R	CAP.-ELECTRO. 10UF-M(SMG) 16V
C766	0244505R	CAP-CERAMIC 0.0022UF-K 500V	⚠ CH23	AN00622R	CAP.POLYESTER 0.0068UF 50V TAPE
C767	0284677R	CAP.-ELECTORO. 100UF-M (BP) 16V	CH24	0890074R	CAP.-CERAMIC 100PF-J 50V
C768	0800294R	CAP.-ELECTRO. 10UF-M(SMG) 50V	CH25	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
C769	0800323R	CAP.-ELECTRO. 47UF-M 100V	⚠ CH28	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V
C770	AJ00132R	CAPACITOR CERAMIC 680P DC2K-R	CH29	0800352R	CAP.-ELECTRO.470UF 10V
C771	AJ00132R	CAPACITOR CERAMIC 680P DC2K-R	CH30	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V
C772	0244505R	CAP-CERAMIC 0.0022UF-K 500V	CH31	0880198R	CAP.-PLOY. 0.22UF-J 50V
C773	0284634R	CAP.-ELECTRO 4.7UF-SME(BP) 50V	CH36	0890069R	CAP.-CERAMIC 47PF-J 50V
C777	AL00793S	CAP.EL.S-LEAD 1200UF-M(LXV) 16V	CH37	AN00616R	CAP.POLYESTER 0.0027UF 50V TAPE
CA01	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	CH42	0890074R	CAP.-CERAMIC 100PF-J 50V
CA02	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	CK01	0800353R	CAP.-ELECTRO.470UF-M 16V
CA03	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	CK02	0800335R	CAP.-ELECTRO. 220UF-M(SMG) 16V
CA04	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	CK03	0800335R	CAP.-ELECTRO. 220UF-M(SMG) 16V
CA05	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	CK04	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
CA06	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	CK05	0800326R	CAP.-ELECTRO. 100UF-M 16V
CA07	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	CK06	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
CA08	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	CK07	0800326R	CAP.-ELECTRO. 100UF-M 16V
CA09	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	CK08	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
CK09	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CP22	0800353R	CAP.-ELECTRO.470UF-M 16V
CK10	0800326R	CAP.-ELECTRO. 100UF-M 16V	CP23	AL00794S	CAP.-EL.S-LEAD 1500UF-M(LXV) 16V
CK11	0890074R	CAP.-CERAMIC 100PF-J 50V	CP24	0800353R	CAP.-ELECTRO.470UF-M 16V
CK12	0890076R	CAP.CERAMIC 150PF-K 50V	CP25	0800353R	CAP.-ELECTRO.470UF-M 16V
CK13	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CP26	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
CK14	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CP27	0800299R	CAP.-ELECTRO. 22UF-M(SMG) 16V
CK15	AN00611R	CAP.POLYSTYLENE 0.001UF 50V TAPE	CP28	0880198R	CAP.-PLOY. 0.22UF-J 50V
CK16	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CP29	0880198R	CAP.-PLOY. 0.22UF-J 50V
CK17	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CP30	0800335R	CAP.-ELECTRO. 220UF-M(SMG) 16V
CK18	AN00624R	CAP.POLYESTER 0.01UF 50V TAPE	CP31	0800335R	CAP.-ELECTRO. 220UF-M(SMG) 16V
CK19	AN00624R	CAP.POLYESTER 0.01UF 50V TAPE	CP32	0800326R	CAP.-ELECTRO. 100UF-M 16V
CK20	0890076R	CAP.CERAMIC 150PF-K 50V	CP33	AL00795S	CAP.EL.S-LEAD 2200UF-M(LXV) 16V
CK21	0890076R	CAP.CERAMIC 150PF-K 50V	CP34	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V
CK22	0890087R	CAP.-CERAMIC 1000PF-K 50V	CP35	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V
CK23	0890076R	CAP.CERAMIC 150PF-K 50V	CP36	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
CK24	0890076R	CAP.CERAMIC 150PF-K 50V	⚠ CP37	AJ00157R	CAPACITOR CERAMIC 1000P 400V B
CK25	0890076R	CAP.CERAMIC 150PF-K 50V	⚠ CP38	AJ00157R	CAPACITOR CERAMIC 1000P 400V B
CK27	0800356N	CAP.-ELECTRO. 470UF-M 50V	CP39	0800328R	CAP. ELECTRO. 100UF-M 35V
CK28	0800356N	CAP.-ELECTRO. 470UF-M 50V	CP40	0800355N	CAP.ELECTRO. 470UF-M 35V
CK29	0890076R	CAP.CERAMIC 150PF-K 50V	CP41	0800355N	CAP.ELECTRO. 470UF-M 35V
CK30	0890076R	CAP.CERAMIC 150PF-K 50V	CP42	AL00796S	CAP.EL.S-LEAD 1200UF-M(LXV) 35V
CK31	0890076R	CAP.CERAMIC 150PF-K 50V	CP43	AL00796S	CAP.EL.S-LEAD 1200UF-M(LXV) 35V
CK32	0890076R	CAP.CERAMIC 150PF-K 50V	CP44	0244202R	CAP.-CERAMIC 470PF-K 2KV
CK33	0890076R	CAP.CERAMIC 150PF-K 50V	CP45	0243511R	CAP.-CERAMIC 680PF-K 500V TAPE
CK34	0890076R	CAP.CERAMIC 150PF-K 50V	CP46	0243511R	CAP.-CERAMIC 680PF-K 500V TAPE
CK36	0800355N	CAP.ELECTRO. 470UF-M 35V	CP47	0243511R	CAP.-CERAMIC 680PF-K 500V TAPE
CK37	0800355N	CAP.ELECTRO. 470UF-M 35V	CP48	0244202R	CAP.-CERAMIC 470PF-K 2KV
CK38	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CP49	0243511R	CAP.-CERAMIC 680PF-K 500V TAPE
CK39	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CP50	0243511R	CAP.-CERAMIC 680PF-K 500V TAPE
CK40	0800353R	CAP.-ELECTRO.470UF-M 16V	CX10	0284625R	CAP.-ELECTRO. 2.2UF-SME(BP)50V
CK41	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CX11	0284625R	CAP.-ELECTRO. 2.2UF-SME(BP)50V
CN01	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	CX12	0284638R	CAP.-ELECTRO. 10UF-SME(BP) 16V
CN02	0800288R	CAP.-ELECTRO. 4.7UF-M(SMG) 50V	CX15	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
CN03	AN00631R	CAP.POLYESTER 0.033UF 50V TAPE	CX16	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
CN04	0890084R	CAP.-CERAMIC 560PF-K 50V	CX19	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
CN05	0800326R	CAP.-ELECTRO. 100UF-M 16V	CX20	0800299R	CAP.-ELECTRO. 22UF-M(SMG) 16V
CN06	0800294R	CAP.-ELECTRO. 10UF-M(SMG) 50V	CX21	0800294R	CAP.-ELECTRO. 10UF-M(SMG) 50V
CN09	AN00615R	CAP.POLYESTER 0.0022UF 50V TAPE	CX24	0284634R	CAP.-ELECTRO 4.7UF-SME(BP) 50V
CP01	0284296	CAP.ELECTRO 680UF-M 250V(KMH)	CX25	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
CP02	0284296	CAP.ELECTRO 680UF-M 250V(KMH)	CX26	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
CP05	0800329R	CAP.-ELECTRO. 100UF-M(SMG) 50V	CX27	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
CP06	0299977F	CAP-PP FILM 0.0047UF-F 630V	CX28	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
CP07	0800282R	CAP.-ELECTORO. 2.2UF-M(SMG) 50V	CX29	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
CP08	0890085R	CAP.-CERAMIC 680PF-K 50V	CX30	0800277R	CAP.-ELECTORO. 0.47UF-M 50V
CP10	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CX31	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
CP11	0284291	CEL-221M251WMT(KMH)	CX32	0800282R	CAP.-ELECTORO. 2.2UF-M(SMG) 50V
CP12	0299610F	CAP.-POLYPRO.FILM 0.001UF 630V	CX33	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
CP13	AL00791S	CAP.-EL.S-LEAD 1500UF-M(LXV) 10V	CX34	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
CP14	AL00795S	CAP.EL.S-LEAD 2200UF-M(LXV) 16V	CX35	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE
CP15	AL00795S	CAP.EL.S-LEAD 2200UF-M(LXV) 16V	CX36	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
CP16	0251704	CAP.ELECTRO 470UF-M 160V(KMH)	CX37	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V
CP17	AL00796S	CAP.EL.S-LEAD 1200UF-M(LXV) 35V	CX38	0893044R	CAP2125CHIP 10000PFKB 50V TAPE
CP18	AL00796S	CAP.EL.S-LEAD 1200UF-M(LXV) 35V	CX39	0893044R	CAP2125CHIP 10000PFKB 50V TAPE
CP19	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CX40	0893044R	CAP2125CHIP 10000PFKB 50V TAPE
CP20	0800352R	CAP.-ELECTRO.470UF 10V	CX41	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V
CP21	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	CX46	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
CX47	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	D313	2344041M	DIODE 1SS254TA/1SS270TA
CX48	0893053R	CAP2125CHIP 47000PFKB 50V TAPE	D314	2344041M	DIODE 1SS254TA/1SS270TA
CX49	0800324R	CAP.-ELECTRO. 100UF-M(SMG) 6.3V	D315	2344041M	DIODE 1SS254TA/1SS270TA
CX50	0893044R	CAP2125CHIP 10000PFKB 50V TAPE	D602	CH00151M	DIODE DSM1SD2(200V)TAPE
CX51	0893044R	CAP2125CHIP 10000PFKB 50V TAPE	D603	CH00151M	DIODE DSM1SD2(200V)TAPE
CX52	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V	D604	CH00151M	DIODE DSM1SD2(200V)TAPE
CX53	0893053R	CAP2125CHIP 47000PFKB 50V TAPE	D605	CH00151M	DIODE DSM1SD2(200V)TAPE
CX56	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	D606	2348212M	DIO-MTZ-J15BTA
CX57	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V	D651	2348432M	DIODE RMPG06G
CX63	0284623R	CAP.-ELECTRO. 1UF-SME(BP) 50V	D653	2348193M	ZENER DIODE MTZJ-12C TA
CX65	AN00637R	CAP.POLYESTER 0.1UF 50V TAPE	D654	2333001M	DIODE RU2M (V) SI 1.0A 400V
CX66	0800317R	CAP.-ELECTRO. 47UF-M(SMG) 16V	D655	2348432M	DIODE RMPG06G
CX69	0800279R	CAP.-ELECTORO. 1.0UF-M(SMG) 50V	⚠ D656	2344072	DIODE ERC20M-08(800V)
			⚠ D657	2344072	DIODE ERC20M-08(800V)
		DIODES	D661	2333001M	DIODE RU2M (V) SI 1.0A 400V
			D662	2344041M	DIODE 1SS254TA/1SS270TA
D003	2344041M	DIODE 1SS254TA/1SS270TA	D663	2344041M	DIODE 1SS254TA/1SS270TA
D004	2344041M	DIODE 1SS254TA/1SS270TA	D702	2344041M	DIODE 1SS254TA/1SS270TA
D005	2344041M	DIODE 1SS254TA/1SS270TA	D705	CH01042M	DIODE RK34 (40V)
D006	2344041M	DIODE 1SS254TA/1SS270TA	D706	CH01042M	DIODE RK34 (40V)
D007	2344041M	DIODE 1SS254TA/1SS270TA	D751	2344041M	DIODE 1SS254TA/1SS270TA
D008	2344041M	DIODE 1SS254TA/1SS270TA	⚠ D752	CH00551F	DIODE FMQ-G5FS LF715 1500V
D009	2344041M	DIODE 1SS254TA/1SS270TA	D753	2344041M	DIODE 1SS254TA/1SS270TA
D010	2348102M	ZENER MTZJ-5.1B TA	D754	2348273M	DIODE MTZ-J27CTA
D012	2348212M	DIO-MTZ-J15BTA	D755	2348141M	ZENER DIODE MTZJ-7.5A TA
D013	2348212M	DIO-MTZ-J15BTA	D756	2344041M	DIODE 1SS254TA/1SS270TA
D014	2348212M	DIO-MTZ-J15BTA	⚠ D757	2348292M	DIODE MTZ-J33BTA
D015	2348212M	DIO-MTZ-J15BTA	⚠ D759	2333001M	DIODE RU2M (V) SI 1.0A 400V
D016	2348212M	DIO-MTZ-J15BTA	D760	2348432M	DIODE RMPG06G
D017	2348212M	DIO-MTZ-J15BTA	D762	2348193M	ZENER DIODE MTZJ-12C TA
D018	2331827M	ZDE HZ-9 TAPE (C1) SI 500MW 9.3V	D771	2344041M	DIODE 1SS254TA/1SS270TA
D019	2331827M	ZD HZ-9 TAPE (C1) SI 500MW 9.3V	DF01	2344041M	DIODE 1SS254TA/1SS270TA
D020	2344041M	DIODE 1SS254TA/1SS270TA	DF02	2344041M	DIODE 1SS254TA/1SS270TA
D021	2344041M	DIODE 1SS254TA/1SS270TA	DF03	2344041M	DIODE 1SS254TA/1SS270TA
D022	2344041M	DIODE 1SS254TA/1SS270TA	DF04	2344041M	DIODE 1SS254TA/1SS270TA
D023	2344041M	DIODE 1SS254TA/1SS270TA	DF05	2338531M	DIODE EG-01C (V) SI 0.5A
D025	2344041M	DIODE 1SS254TA/1SS270TA	DF07	CH00901M	DIODE RGP02-15E 1500V 20A
D030	2344041M	DIODE 1SS254TA/1SS270TA	DF08	CH00901M	DIODE RGP02-15E 1500V 20A
D031	2344041M	DIODE 1SS254TA/1SS270TA	DH01	2348103M	ZENER MTZJ-5.1C TA
D032	2344041M	DIODE 1SS254TA/1SS270TA	DH02	2348103M	ZENER MTZJ-5.1C TA
D033	2348212M	DIO-MTZ-J15BTA	DH03	2348103M	ZENER MTZJ-5.1C TA
D034	2344041M	DIODE 1SS254TA/1SS270TA	DH04	2348062M	ZENER MTZJ-3.6B TA
D035	2335991M	ZENER HZ-T33 (02 TP)	DH05	2344041M	DIODE 1SS254TA/1SS270TA
D036	2335991M	ZENER HZ-T33 (02 TP)	DH06	2348212M	DIO-MTZ-J15BTA
D037	2348212M	DIO-MTZ-J15BTA	DH07	2348212M	DIO-MTZ-J15BTA
D038	2344041M	DIODE 1SS254TA/1SS270TA	DH08	2344041M	DIODE 1SS254TA/1SS270TA
D039	2348163M	ZENER MTZJ-9.1C TA	DH09	2339551M	DIODE ED14(V1) SI 5MA 45V
D040	2348163M	ZENER MTZJ-9.1C TA	DH10	2344041M	DIODE 1SS254TA/1SS270TA
D041	2348163M	ZENER MTZJ-9.1C TA	⚠ DH11	2337361F	DIODE RU4D LF-20
D305	2344041M	DIODE 1SS254TA/1SS270TA	DH12	2344041M	DIODE 1SS254TA/1SS270TA
D307	2348163M	ZENER MTZJ-9.1C TA	DH13	2344041M	DIODE 1SS254TA/1SS270TA
D308	2348163M	ZENER MTZJ-9.1C TA	DH15	2344041M	DIODE 1SS254TA/1SS270TA
D309	2344041M	DIODE 1SS254TA/1SS270TA	DH16	2344041M	DIODE 1SS254TA/1SS270TA
D310	2348031M	DIO-MTZ-J2.7ATA	DH17	CH00151M	DIODE DSM1SD2(200V)TAPE
D311	2344041M	DIODE 1SS254TA/1SS270TA	DH20	CH00151M	DIODE DSM1SD2(200V)TAPE
D312	2348031M	DIO-MTZ-J2.7ATA	DH21	2344041M	DIODE 1SS254TA/1SS270TA

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
DH22	2344041M	DIODE 1SS254TA/1SS270TA	DP01	CH00172M	DIODE DFM1SD2(200V)TAPE
DH23	2344041M	DIODE 1SS254TA/1SS270TA	DP02	2334324M	ZD RD36E TAPE (B3) SI 500MW 36V
⚠ DH24	CH00031M	DIODE AU02V1(280V)	DP03	CH00172M	DIODE DFM1SD2(200V)TAPE
DH25	2348174M	DIODE MTZ-J10DTA	DP04	2331844M	ZENER HZ12-B1
DH26	2348193M	ZENER DIODE MTZJ-12C TA	DP05	2331844M	ZENER HZ12-B1
DH27	2344041M	DIODE 1SS254TA/1SS270TA	DP06	CH00183R	LIGHT EMITTING DIODE (SLZ-981C-06-T1)
DH28	2348092M	ZENER MTZ-J4.7BTA	DP07	CH01061F	DIODE RU4AM(600V)
DH29	2344041M	DIODE 1SS254TA/1SS270TA	DP08	2336615	DIODE RU3YX (LF-A1)
DH30	2344041M	DIODE 1SS254TA/1SS270TA	DP09	2336615	DIODE RU3YX (LF-A1)
DH31	2335042M	ZENER HZ-22 (2L TP) SI 200MA 400MW	DP10	2336615	DIODE RU3YX (LF-A1)
⚠ DH32	2344041M	DIODE 1SS254TA/1SS270TA	DP11	CH01061F	DIODE RU4AM(600V)
DH33	2334305M	ZENER RD30E (B4 T2/TP/TA) SI 5MA 30.51V	DP12	2337952S	DIODE RU4YX(LF015-302)
⚠ DH34	2344041M	DIODE 1SS254TA/1SS270TA	DP13	2337952S	DIODE RU4YX(LF015-302)
⚠ DH35	2344041M	DIODE 1SS254TA/1SS270TA	DP14	CH01042M	DIODE RK34 (40V)
DH40	2344041M	DIODE 1SS254TA/1SS270TA	DP15	CH00182R	LIGHT EMITTING DIODE (SLZ-381C-06-T1)
DH41	2334243M	ZENER RD16E (B2 T2/TP/TA)SI 10MA 16.51V	DP16	CH00182R	LIGHT EMITTING DIODE (SLZ-381C-06-T1)
DH42	2334324M	ZD RD36E TAPE (B3) SI 500MW 36V	DP17	2348283M	ZENER DIODE MTZJ-30C TA
DK01	2339551M	DIODE ED14(V1) SI 5MA 45V	DP18	2348143M	DIODE MTZ-J7.5CTA
DK04	2348431M	DIODE RMPG06D	DP19	2344041M	DIODE 1SS254TA/1SS270TA
DK05	2348431M	DIODE RMPG06D	DP20	CH00182R	LIGHT EMITTING DIODE (SLZ-381C-06-T1)
DK16	2334324M	ZD RD36E TAPE (B3) SI 500MW 36V	DP21	CH00182R	LIGHT EMITTING DIODE (SLZ-381C-06-T1)
DK17	2334324M	ZD RD36E TAPE (B3) SI 500MW 36V	DP22	CH00182R	LIGHT EMITTING DIODE (SLZ-381C-06-T1)
DK18	2334324M	ZD RD36E TAPE (B3) SI 500MW 36V	DP23	2344041M	DIODE 1SS254TA/1SS270TA
DK19	2334324M	ZD RD36E TAPE (B3) SI 500MW 36V	DP25	2344041M	DIODE 1SS254TA/1SS270TA
DK20	2334324M	ZD RD36E TAPE (B3) SI 500MW 36V	DP26	2348042M	ZENER MTZ-J3.0BTA
DK21	2334324M	ZD RD36E TAPE (B3) SI 500MW 36V	DP27	2344041M	DIODE 1SS254TA/1SS270TA
DK22	2334324M	ZD RD36E TAPE (B3) SI 500MW 36V	DP28	2348121M	ZENER MTZJ-6.2A TA
DK23	2334324M	ZD RD36E TAPE (B3) SI 500MW 36V	DP29	2344041M	DIODE 1SS254TA/1SS270TA
DK24	2334324M	ZD RD36E TAPE (B3) SI 500MW 36V	DP30	2348432M	DIODE RMPG06G
DK25	2334324M	ZD RD36E TAPE (B3) SI 500MW 36V	DP31	2348432M	DIODE RMPG06G
DK26	2334324M	ZD RD36E TAPE (B3) SI 500MW 36V	DP32	2348121M	ZENER MTZJ-6.2A TA
DK27	2334324M	ZD RD36E TAPE (B3) SI 500MW 36V	DP33	2344041M	DIODE 1SS254TA/1SS270TA
DK30	2348141M	ZENER DIODE MTZJ-7.5A TA	DP34	2344041M	DIODE 1SS254TA/1SS270TA
DK31	2348141M	ZENER DIODE MTZJ-7.5A TA	DP36	CH00901M	DIODE RGP02-15E 1500V 20A
DK32	2348141M	ZENER DIODE MTZJ-7.5A TA	DP37	CH00901M	DIODE RGP02-15E 1500V 20A
DK33	2348141M	ZENER DIODE MTZJ-7.5A TA	DP38	2344041M	DIODE 1SS254TA/1SS270TA
DK34	2348141M	ZENER DIODE MTZJ-7.5A TA	DP39	2348193M	ZENER DIODE MTZJ-12C TA
DK35	2348141M	ZENER DIODE MTZJ-7.5A TA	DP41	2348431M	DIODE RMPG06D
DK36	2348141M	ZENER DIODE MTZJ-7.5A TA	DX01	2344041M	DIODE 1SS254TA/1SS270TA
DK37	2348141M	ZENER DIODE MTZJ-7.5A TA	DX02	2344041M	DIODE 1SS254TA/1SS270TA
DK40	2331806M	ZENER DIODE HZ-6 TAPE (B3) SI 500MW	DX05	2344041M	DIODE 1SS254TA/1SS270TA
DK41	2331806M	ZENER DIODE HZ-6 TAPE (B3) SI 500MW	DX06	2344041M	DIODE 1SS254TA/1SS270TA
DK42	2331806M	ZENER DIODE HZ-6 TAPE (B3) SI 500MW	DX07	2344041M	DIODE 1SS254TA/1SS270TA
DK43	2331806M	ZENER DIODE HZ-6 TAPE (B3) SI 500MW	DX08	2348163M	ZENER MTZJ-9.1C TA
DK44	2331806M	ZENER DIODE HZ-6 TAPE (B3) SI 500MW	DX09	2348163M	ZENER MTZJ-9.1C TA
DN01	2344041M	DIODE 1SS254TA/1SS270TA	DX10	2348163M	ZENER MTZJ-9.1C TA
DN02	2344041M	DIODE 1SS254TA/1SS270TA	DX11	2344041M	DIODE 1SS254TA/1SS270TA
DN03	2344041M	DIODE 1SS254TA/1SS270TA	DX12	2344041M	DIODE 1SS254TA/1SS270TA
DN04	2344041M	DIODE 1SS254TA/1SS270TA			
DN05	2348071M	ZENER DIODE MTZJ-3.9A TA			**FUSES**
DN06	2344041M	DIODE 1SS254TA/1SS270TA			
DN07	2344041M	DIODE 1SS254TA/1SS270TA	⚠ EP91	AZ00109M	PROTECTOR CRXT491007
DN08	CH00151M	DIODE DSM1SD2(200V)TAPE	⚠ EP92	AZ00107M	PROTECTOR CRXT491004
DN09	2331849M	ZENER HZ12C3 (TA) SI 500MW	⚠ EP93	AZ00108M	PROTECTOR(CRXT491005)
DN10	2344041M	DIODE 1SS254TA/1SS270TA	⚠ EP94	AZ00109M	PROTECTOR CRXT491007
DN11	2344041M	DIODE 1SS254TA/1SS270TA	⚠ EP95	AZ00109M	PROTECTOR CRXT491007

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION
⚠ EP96	AZ00109M	PROTECTOR CRXT491007
⚠ EP97	AZ00109M	PROTECTOR CRXT491007
⚠ EP98	AZ00104M	PROTECTOR(CRXT491002)
⚠ EP99	AZ00101M	PROTECTOR(CRXT491.500)
		INTEGRATED CIRCUITS
I001	CP06343U	IC-MN102L35GHA2 MAIN MICRO
I002	CP05272U	E2PROM M24C16-BN6
I003	CP05261U	DIGITAL MONOLITHIC IC (M62392P)
I004	2015712R	IC HD74HC4053FPEL
I005	2000541	IC M51951BSL
I008	CP05571	IC BA17805
I010	CP05571	IC BA17805
I012	CP04232	ANALOG MONOLITHIC IC BA033T
I013	CK08521R	ANALOG MONOLITHIC IC (BA7657F-E2)
I014	CK07131R	ANALOG MONO. IC (MC14053BFEL)
I016	2020342	IC MM1115XS
I301	CP00742U	TA8851BN
I302	CP05572	ANALOG MONOLITHIC IC (BA17809)
I304	CW00022	COMB FILTER (337KNT)
I305	2020342	IC MM1115XS
I601	CZ00761U	LA7846N
I651	2365452	IC NJM2903D
I701	CP05571	IC BA17805
I702	CZ00751U	UPC1885
I703	CP00401	DIGITAL MONOLITHIC IC (UPC4558C)
IH01	2362161	IC HD74LS221P
IH02	2366721	IC UPC1394C
IK01	CP05571	IC BA17805
IK02	CP01631R	ICL-PST9142
IK03	CP05571	IC BA17805
IK04	CZ00431	CONV. OUTPUT (STK392-110)
IK05	CZ00431	CONV. OUTPUT (STK392-110)
⚠ IP01	CZ00451	REGULATOR IC (STR-M6811A)
IP02	CP05141	ANALOG MONOLITHIC IC (PQ6RD083)
IP03	CP03924F	IC SI-8120S
⚠ IP04	2381344	IC SE130N
⚠ IP05	2000465	IC PS2501-1 (KC/LC)
⚠ IP06	2000465	IC PS2501-1 (KC/LC)
IX01	CP04712U	ANALOG MONOLITHIC IC (TA1276AN)
		COILS
L001	BJ00402	30MHZ BAND PASS LC FILTER 87F2
L002	BH00214R	FILTER COIL 100UH
L003	BH00697R	COIL 100UH
L004	BH00697R	COIL 100UH
L005	BH00214R	FILTER COIL 100UH
L007	BH00214R	FILTER COIL 100UH
L008	BH00214R	FILTER COIL 100UH
L009	BH00214R	FILTER COIL 100UH
L010	BH00214R	FILTER COIL 100UH
L012	BH00697R	COIL 100UH
L013	BH00697R	COIL 100UH
L014	BH00697R	COIL 100UH
L015	BH00697R	COIL 100UH
L016	BH00697R	COIL 100UH
L017	BH00694R	COIL 56UH
L018	BH00697R	COIL 100UH
L020	BH00697R	COIL 100UH
L021	BH00214R	FILTER COIL 100UH
L022	BH00697R	COIL 100UH
L023	BH00697R	COIL 100UH
L024	BH00697R	COIL 100UH
L025	BH00697R	COIL 100UH
L026	BH00697R	COIL 100UH
L028	BH00697R	COIL 100UH
L029	BH00697R	COIL 100UH
L030	BH00697R	COIL 100UH
L031	2123107M	LAL02 AXIAL COIL 22UH-K
L032	BH00697R	COIL 100UH
L301	BH00697R	COIL 100UH
L302	BH00697R	COIL 100UH
L303	BH00697R	COIL 100UH
L304	BH00697R	COIL 100UH
L305	BH00697R	COIL 100UH
L306	BH00697R	COIL 100UH
L651	BZ00841	CHOKE COIL 150UH SL1720
L652	BH00561	COIL HC-331K-1
L661	2123462M	FERRITE BEADS CORE B 2.3UH
L662	2123462M	FERRITE BEADS CORE B 2.3UH
L751	BH00212R	FILTER COIL 68UH
L752	BZ02582	H. LINEARITY COIL 3UH
L753	BZ02583	LINEARITY COIL 6UH
L755	2123462M	FERRITE BEADS CORE B 2.3UH
L757	2123462M	FERRITE BEADS CORE B 2.3UH
L758	BH00228R	COIL 332K-1T7608A
L763	2123461M	FERRITE BEADS B 0.8 MH
L765	2123461M	FERRITE BEADS B 0.8 MH
L771	2123461M	FERRITE BEADS B 0.8 MH
L772	2123461M	FERRITE BEADS B 0.8 MH
L773	2123461M	FERRITE BEADS B 0.8 MH
LF01	BH00229R	COIL 472K-1T7608A
LH01	BH00214R	FILTER COIL 100UH
⚠ LH02	BH00214R	FILTER COIL 100UH
LH03	BH00217R	FILTER COIL 180UH
LK01	2123468M	FERRITE BEADS CORE LEAD 0.8MH
LK02	2123468M	FERRITE BEADS CORE LEAD 0.8MH
LK03	2123468M	FERRITE BEADS CORE LEAD 0.8MH
LK04	2123468M	FERRITE BEADS CORE LEAD 0.8MH
LK05	2123468M	FERRITE BEADS CORE LEAD 0.8MH
LK06	2123468M	FERRITE BEADS CORE LEAD 0.8MH
LK07	2123468M	FERRITE BEADS CORE LEAD 0.8MH
LK08	2123468M	FERRITE BEADS CORE LEAD 0.8MH
LK09	2123462M	FERRITE BEADS CORE B 2.3UH
LK10	2123462M	FERRITE BEADS CORE B 2.3UH
LK11	2123462M	FERRITE BEADS CORE B 2.3UH

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
LK12	BH00697R	COIL 100UH	Q020	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LK13	2123468M	FERRITE BEADS CORE LEAD 0.8MH	Q021	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LK14	2123468M	FERRITE BEADS CORE LEAD 0.8MH	Q022	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LK15	2123468M	FERRITE BEADS CORE LEAD 0.8MH	Q023	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LK16	2123468M	FERRITE BEADS CORE LEAD 0.8MH	Q024	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LK17	2123468M	FERRITE BEADS CORE LEAD 0.8MH	Q025	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LK18	2123468M	FERRITE BEADS CORE LEAD 0.8MH	Q026	2325781R	2SA1037KT146Q/R
LK19	2123468M	FERRITE BEADS CORE LEAD 0.8MH	Q031	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LK20	2123468M	FERRITE BEADS CORE LEAD 0.8MH	Q032	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LP01	2123462M	FERRITE BEADS CORE B 2.3UH	Q033	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LP02	2123462M	FERRITE BEADS CORE B 2.3UH	Q034	2325781R	2SA1037KT146Q/R
LP03	BH00214R	FILTER COIL 100UH	Q035	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LP04	BH00214R	FILTER COIL 100UH	Q036	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LP05	BH00209R	FILTER COIL 47UH	Q037	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LP06	BH00209R	FILTER COIL 47UH	Q038	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LP07	BV00901	PL-CHOPPER COIL 200UH/2A	Q039	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LP08	BH00212R	FILTER COIL 68UH	Q040	2325781R	2SA1037KT146Q/R
LP09	BH00212R	FILTER COIL 68UH	Q041	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LP10	BH00212R	FILTER COIL 68UH	Q042	2325781R	2SA1037KT146Q/R
LP11	BH00206R	FILTER COIL 27UH	Q043	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LP12	BH00209R	FILTER COIL 47UH	Q044	2325781R	2SA1037KT146Q/R
LP13	BH00206R	FILTER COIL 27UH	Q045	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LP14	BH00209R	FILTER COIL 47UH	Q046	2325781R	2SA1037KT146Q/R
LP17	BH00214R	FILTER COIL 100UH	Q047	2320647M	TRS. 2SC1213 (C 21 TZ/D 21 TZ) SI 80MHZ400MW
LP18	BH00217R	FILTER COIL 180UH	Q048	2325781R	2SA1037KT146Q/R
LP20	2123461M	FERRITE BEADS B 0.8 MH	Q049	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LP22	2124362	DC.NOISE FILTER	Q050	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LP23	2124362	DC.NOISE FILTER	Q051	2325781R	2SA1037KT146Q/R
LX03	BH00697R	COIL 100UH	Q052	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LX04	BH00697R	COIL 100UH	Q053	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LX05	BH00697R	COIL 100UH	Q054	2325781R	2SA1037KT146Q/R
LX06	BH00697R	COIL 100UH	Q055	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LX07	BH00697R	COIL 100UH	Q056	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LX08	BH00697R	COIL 100UH	Q057	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
LX09	BH00697R	COIL 100UH	Q058	2325781R	2SA1037KT146Q/R
LX10	BH00697R	COIL 100UH	Q059	2325781R	2SA1037KT146Q/R
LX17	BH00697R	COIL 100UH	Q061	2325781R	2SA1037KT146Q/R
			Q062	2325781R	2SA1037KT146Q/R
			Q063	2325781R	2SA1037KT146Q/R
		TRANSISTORS	Q067	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
			Q068	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q002	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	Q069	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q003	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	Q070	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q004	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	Q071	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q005	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	Q301	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q006	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	Q302	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q007	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	Q303	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q008	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	Q305	2320647M	TRS. 2SC1213 (C 21 TZ/D 21 TZ) SI 80MHZ400MW
Q009	2312171	TRS. 2SC3852	Q306	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q010	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	Q307	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q011	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	Q312	2320647M	TRS. 2SC1213 (C 21 TZ/D 21 TZ) SI 80MHZ400MW
Q012	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	Q313	2320647M	TRS. 2SC1213 (C 21 TZ/D 21 TZ) SI 80MHZ400MW
Q013	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	Q321	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q014	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	Q324	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q015	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	Q329	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q018	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	Q330	2320647M	TRS. 2SC1213 (C 21 TZ/D 21 TZ) SI 80MHZ400MW
Q019	2325781R	2SA1037KT146Q/R	Q331	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
Q332	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	QP03	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW
Q333	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)	QP04	2321112M	TRS.2SA778AK(02 TAPE)
Q334	2325781R	2SA1037KT146Q/R	⚠ QP05	2323782R	THYRISTOR 03P2M(TA)
Q335	2320647M	TRS. 2SC1213 (C 21 TZ/D 21 TZ) SI 80MHZ400MW	QP06	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW
Q336	2320647M	TRS. 2SC1213 (C 21 TZ/D 21 TZ) SI 80MHZ400MW	QP08	2327461	TRS.2SA1488 (Y/G)
Q601	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	QX08	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q602	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	QX09	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q610	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	QX10	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q652	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW	QX14	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q653	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW	QX15	2325781R	2SA1037KT146Q/R
Q654	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW	QX16	2325781R	2SA1037KT146Q/R
Q655	2320663M	TRS. 2SC1213A (C)	QX17	2325781R	2SA1037KT146Q/R
Q656	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW	QX23	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW
Q657	CF00931U	TRS. 2SK2382 200V	QX28	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW
Q701	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	QX33	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW
Q751	2326216	TRS. 2SC3116 (S/T)	QX36	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
Q754	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW	QX37	2325781R	2SA1037KT146Q/R
Q755	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	QX38	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
⚠ Q777	CF01891F	TRS. 2SC5413 DEFLECTION OUTPUT	QX41	2320647M	TRS. 2SC1213 (C 21 TZ/D 21 TZ) SI 80MHZ400MW
QF01	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	QX45	2325691R	TRANSISTOR CHIP(2SC2412KQ/R)
QF02	2320663M	TRS. 2SC1213A (C)	QX46	2325781R	2SA1037KT146Q/R
QF03	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW			
QF04	2320663M	TRS. 2SC1213A (C)			**RESISTORS**
QF05	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW			
QF06	CF00821F	TRS. 2SC4686A 1200V	R001	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
QF07	CF00821F	TRS. 2SC4686A 1200V	R002	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
QF08	2326873R	TRS. DTC144ES TP	R003	0700032M	RES.-CARBON FLM 1/16W 220-JB
QF09	CF00821F	TRS. 2SC4686A 1200V	R004	0195918R	RES 2125 CHIP 1/16W 5.6KJ TAPE
⚠ QH01	2390851	TRS. ST-1MB12-140 H.V. OUTPUT (ABC)	R005	0195918R	RES 2125 CHIP 1/16W 5.6KJ TAPE
QH02	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW	R006	0195875R	RES 2125 CHIP 1/16W 100J TAPE
QH03	2321112M	TRS.2SA778AK(02 TAPE)	R007	0195875R	RES 2125 CHIP 1/16W 100J TAPE
⚠ QH04	2321321M	TRS. 2SA844 (D TZ/E TZ) SI 200MHZ300MW	R008	0195916R	RESISTOR 2125 CHIP 1/16W 4.7KJ TAPE
⚠ QH05	2321321M	TRS. 2SA844 (D TZ/E TZ) SI 200MHZ300MW	R010	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
QH06	2321321M	TRS. 2SA844 (D TZ/E TZ) SI 200MHZ300MW	R011	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
QH07	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW	R012	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
QH08	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	R013	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
QH09	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	R014	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
QH10	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW	R015	0700027M	RES.-CARBON FLM 1/16W 100-JB
QH11	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	R016	0700027M	RES.-CARBON FLM 1/16W 100-JB
QH12	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW	R017	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
QH13	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	R018	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
QK01	2312171	TRS. 2SC3852	R019	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
QK02	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW	R020	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
QK03	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW	R021	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
QK06	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	R022	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
QK07	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	R023	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
QK08	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	R024	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
QN01	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	R025	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
QN02	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	R026	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
QN03	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	R027	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
QN04	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW	R029	0700027M	RES.-CARBON FLM 1/16W 100-JB
QN05	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	R030	0700027M	RES.-CARBON FLM 1/16W 100-JB
QN06	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW	R031	0195875R	RES 2125 CHIP 1/16W 100J TAPE
QN07	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ200MW	R032	0195875R	RES 2125 CHIP 1/16W 100J TAPE
QP01	2312171	TRS. 2SC3852	R033	0700027M	RES.-CARBON FLM 1/16W 100-JB
QP02	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ 400MW	R034	0700027M	RES.-CARBON FLM 1/16W 100-JB

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SYMBOL NO.	PART NO.	PART DESCRIPTION
R035	0700027M	RES.-CARBON FLM 1/16W 100-JB
R036	0700027M	RES.-CARBON FLM 1/16W 100-JB
R037	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R038	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R039	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
R040	0700027M	RES.-CARBON FLM 1/16W 100-JB
R041	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R042	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R043	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
R044	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R046	0195975R	RMC73S-2A105JR
R047	0195918R	RES 2125 CHIP 1/16W 5.6KJ TAPE
R048	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R049	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R050	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R051	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R052	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R053	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R054	0195902R	RES 2125 CHIP 1/16W 1.2KJ TAPE
R055	0195885R	RESISTOR 2125 CHIP 1/16W 270J TAPE
R056	0195893R	RES 2125 CHIP 1/16W 560J TAPE
R057	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R058	0195879R	RES 2125 CHIP 1/16W 150J TAPE
R059	0195904R	RESISTOR 2125 CHIP 1/16W 1.5KJ TAPE
R060	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
R061	0195966R	RES 2125 CHIP 1/16W 470KJ TAPE
R062	0195918R	RES 2125 CHIP 1/16W 5.6KJ TAPE
R063	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
R064	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
R065	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
R066	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
R067	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
R068	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R069	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R070	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R071	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R072	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R073	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R074	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R075	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R076	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R077	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R078	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R079	0700054M	RES.-CARBON FLM 1/16W 10K-JB
R080	0700054M	RES.-CARBON FLM 1/16W 10K-JB
R081	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R082	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R083	0700054M	RES.-CARBON FLM 1/16W 10K-JB
R084	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R085	0700054M	RES.-CARBON FLM 1/16W 10K-JB
R086	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE
R088	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R089	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R090	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R091	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R092	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R093	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R094	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R096	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R097	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R098	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R099	0195918R	RES 2125 CHIP 1/16W 5.6KJ TAPE
R0A0	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R0A1	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R0A2	0114149M	RESISTOR-CARBON FILM SRD 1/4 PF 560-J
R0A3	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
R0A4	0195916R	RESISTOR 2125 CHIP 1/16W 4.7KJ TAPE
R0A5	0195927R	RES 2125 CHIP 1/16W 12KJ TAPE
R0A6	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE
R0A7	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE
R0A8	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R0A9	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0C1	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R0C2	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0C6	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0C7	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0C8	0195895R	RES.2125 CHIP 1/10W 680J TAPE
R0C9	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0E1	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0E2	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R0E3	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0E4	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0E5	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R0E6	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R0E7	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R0E8	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R0E9	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R0F1	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R0F2	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R0F3	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R0F4	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0F5	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0F6	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0F7	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0F8	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0F9	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0G1	0195895R	RES.2125 CHIP 1/10W 680J TAPE
R0G2	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R0G3	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R0G4	0195918R	RES 2125 CHIP 1/16W 5.6KJ TAPE
R0G5	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0G6	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0G7	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0G8	0100059M	RES.-CARBON FLM 1/8W 560-JB
R0G9	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R0H1	0700063M	RES.-CARBON FLM 1/16W 47K-JB
R0H2	0700058M	RES.-CARBON FLM 1/16W 22K-JB
R0H3	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R0H5	0195875R	RES 2125 CHIP 1/16W 100J TAPE

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
R0H6	0195897R	RES 2125 CHIP 1/16W 820J TAPE	R0U2	0700027M	RES.-CARBON FLM 1/16W 100-JB
R0H7	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE	R0U3	0195908R	RES.2125 CHIP 1/10W 2.2KJ TAPE
R0H8	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE	R0U4	0119605M	RES.-MTL FLM 1/8W 820-FB
R0H9	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R0U5	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R0J1	0195891R	RES 2125 CHIP 1/16W 470J TAPE	R0U6	0700045M	RES.-CARBON FLM 1/16W 2.2K-JB
R0J2	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R0U7	0195927R	RES 2125 CHIP 1/16W 12KJ TAPE
R0J3	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE	R0U8	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE
R0J4	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE	R0U9	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R0J5	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R0V1	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB
R0J6	0195893R	RES 2125 CHIP 1/16W 560J TAPE	R0V2	0119617M	RES.-MTL FLM 1/8W 2.7K-FB
R0J7	0195891R	RES 2125 CHIP 1/16W 470J TAPE	R0V3	0195927R	RES 2125 CHIP 1/16W 12KJ TAPE
R0J8	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R0V4	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE
R0J9	0195891R	RES 2125 CHIP 1/16W 470J TAPE	R0V5	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R0K1	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE	R0V6	0195910R	RES.2125 CHIP 1/16W 2.7KJ TAPE
R0K2	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE	R0V7	0119615M	RES.-MTL FLM 1/8W 2.2K-FB
R0K3	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE	R0V8	0119621M	RES.-MTL FLM 1/8W 3.9K-FB
R0K4	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R0V9	0195910R	RES.2125 CHIP 1/16W 2.7KJ TAPE
R0K5	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE	R0W1	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R0K6	0195891R	RES 2125 CHIP 1/16W 470J TAPE	R0W2	0119611M	RES.-MTL FLM 1/8W 1.5K-FB
R0K7	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R0W3	0195895R	RES.2125 CHIP 1/10W 680J TAPE
R0K8	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE	R0W4	0195895R	RES.2125 CHIP 1/10W 680J TAPE
R0K9	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE	R0W5	0195895R	RES.2125 CHIP 1/10W 680J TAPE
R0L1	0195871R	RMC73S-2A750JR	R0W6	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R0L2	0195866R	RES 2125 CHIP 1/16W 47J TAPE	R0W7	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R0L3	0195866R	RES 2125 CHIP 1/16W 47J TAPE	R0W8	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R0L4	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE	R0W9	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R0L5	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE	R0X1	0119607M	RES.-MTL FLM 1/8W 1.0K-FB
R0L6	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE	R0X3	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R0L7	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE	R0X4	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0L8	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE	R0X5	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R0L9	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE	R0X6	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0M1	0195908R	RES.2125 CHIP 1/10W 2.2KJ TAPE	R0X7	0195916R	RESISTOR 2125 CHIP 1/16W 4.7KJ TAPE
R0M2	0195912R	RES 2125 CHIP 1/16W 3.3KJ TAPE	R0X8	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0M3	0195920R	RES 2125 CHIP 1/16W 6.8KJ TAPE	R0X9	0195916R	RESISTOR 2125 CHIP 1/16W 4.7KJ TAPE
R0M4	0700027M	RES.-CARBON FLM 1/16W 100-JB	R0Y0	0195887R	RES 2125 CHIP 1/16W 330J TAPE
R0M5	0700027M	RES.-CARBON FLM 1/16W 100-JB	R0Y1	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0M6	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R0Y2	0195897R	RES 2125 CHIP 1/16W 820J TAPE
R0M7	0700051M	RES.-CARBON FLM 1/16W 5.6K-JB	R0Y3	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0M8	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE	R0Y4	0700034M	RES.-CARBON FLM 1/16W 330-JB
R0M9	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE	R0Y5	0195883R	RES 2125 CHIP 1/16W 220J TAPE
R0N1	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE	R0Y6	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0N2	0195943R	RES.2125 CHIP 1/16W 56KJ TAPE	R0Y7	0700034M	RES.-CARBON FLM 1/16W 330-JB
R0N3	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE	R0Y8	0195883R	RES 2125 CHIP 1/16W 220J TAPE
R0N6	0195250R	RES 2125 CHIP 1/16W 000 TAPE	R0Y9	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0R3	0100059M	RES.-CARBON FLM 1/8W 560-JB	R0Z0	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R0R4	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB	R0Z1	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R0R6	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB	R0Z2	0195897R	RES 2125 CHIP 1/16W 820J TAPE
R0R7	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R0Z3	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R0T5	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R0Z4	0195893R	RES 2125 CHIP 1/16W 560J TAPE
R0T6	0700027M	RES.-CARBON FLM 1/16W 100-JB	R0Z5	0195893R	RES 2125 CHIP 1/16W 560J TAPE
R0T7	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R0Z6	0195893R	RES 2125 CHIP 1/16W 560J TAPE
R0T8	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE	R0Z8	0700019M	RES.-CARBON FLM 1/16W 27-J
R0T9	0195908R	RES.2125 CHIP 1/10W 2.2KJ TAPE	R0Z9	0700019M	RES.-CARBON FLM 1/16W 27-J
R0U1	0700027M	RES.-CARBON FLM 1/16W 100-JB	R100	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION
R101	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE
R102	0195918R	RES 2125 CHIP 1/16W 5.6KJ TAPE
R103	0195927R	RES 2125 CHIP 1/16W 12KJ TAPE
R104	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE
R111	0195943R	RES.2125 CHIP 1/16W 56KJ TAPE
R112	0195947R	RES.2125 CHIP 1/10W 82KJ TAPE
R113	0195881R	RES 2125 CHIP 1/16W 180J TAPE
R114	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE
R115	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
R116	0195916R	RESISTOR 2125 CHIP 1/16W 4.7KJ TAPE
R117	0195916R	RESISTOR 2125 CHIP 1/16W 4.7KJ TAPE
R126	0195927R	RES 2125 CHIP 1/16W 12KJ TAPE
R127	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE
R128	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R129	0195943R	RES.2125 CHIP 1/16W 56KJ TAPE
R130	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R131	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R132	0195883R	RES 2125 CHIP 1/16W 220J TAPE
R133	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R136	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R141	0700027M	RES.-CARBON FLM 1/16W 100-JB
R142	0700037M	RES.-CARBON FLM 1/16W 560-JB
R143	0700027M	RES.-CARBON FLM 1/16W 100-JB
R144	0195893R	RES 2125 CHIP 1/16W 560J TAPE
R145	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R146	0195893R	RES 2125 CHIP 1/16W 560J TAPE
R147	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R148	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R149	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R150	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R151	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R152	0700027M	RES.-CARBON FLM 1/16W 100-JB
R153	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R155	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R156	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R157	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R158	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R159	0700027M	RES.-CARBON FLM 1/16W 100-JB
R160	0700027M	RES.-CARBON FLM 1/16W 100-JB
R161	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R162	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R163	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R164	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R165	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R166	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R169	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R171	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R172	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R173	0195918R	RES 2125 CHIP 1/16W 5.6KJ TAPE
R174	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE
R175	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R176	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE
R179	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R183	0700049M	RES.-CARBON FLM 1/16W 4.7K-JB
R195	0195893R	RES 2125 CHIP 1/16W 560J TAPE
R197	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R199	0195893R	RES 2125 CHIP 1/16W 560J TAPE
R1A1	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1A2	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1C8	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1C9	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1E1	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1E2	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1E3	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1E4	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1E5	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1E6	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1E7	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1E8	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1E9	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1F1	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1F2	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1F3	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1F4	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1F5	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1F6	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1F7	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1F9	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1G2	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1G3	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1G4	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1G5	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1G6	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1G7	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1G8	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1G9	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1H3	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1H4	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1H5	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1H6	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1H7	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1H8	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1J1	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1J2	0195248R	RES 3216 CHIP 1/8 W 000 TAPE
R1J6	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1L0	0195881R	RES 2125 CHIP 1/16W 180J TAPE
R1L1	0195881R	RES 2125 CHIP 1/16W 180J TAPE
R1L2	0195881R	RES 2125 CHIP 1/16W 180J TAPE
R1L3	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R1L5	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R1M1	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R1M2	0195906R	RES MINI-CHIP RMC1/16 1.8K-J TAPE

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
R1M4	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R343	0195870R	RESISTOR MINI-CHIP RMC1/10 68-J TAPE
R1M5	0195906R	RESISTOR MINI-CHIP RMC1/16 1.8K-J TAPE	R344	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE
R1M6	0700038M	RES.-CARBON FLM 1/16W 680-JB	R350	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1P1	0700027M	RES.-CARBON FLM 1/16W 100-JB	R351	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R1P2	0195912R	RES 2125 CHIP 1/16W 3.3KJ TAPE	R352	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R1P3	0195250R	RES 2125 CHIP 1/16W 000 TAPE	R353	0195908R	RES.2125 CHIP 1/10W 2.2KJ TAPE
R1P4	0195250R	RES 2125 CHIP 1/16W 000 TAPE	R355	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R1P5	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R356	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R1P6	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R357	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE
R1X1	0195250R	RES 2125 CHIP 1/16W 000 TAPE	R358	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R1X2	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R359	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R1X3	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE	R360	0195960R	RESISTOR MINI-CHIP RMC1/16 270K-J TAPE
R1X4	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R361	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R1X5	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R382	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R1X6	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE	R383	0195893R	RES 2125 CHIP 1/16W 560J TAPE
R1X7	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB	R384	0195893R	RES 2125 CHIP 1/16W 560J TAPE
R1X8	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE	R386	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R207	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R387	0195893R	RES 2125 CHIP 1/16W 560J TAPE
R212	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE	R388	0195893R	RES 2125 CHIP 1/16W 560J TAPE
R217	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE	R389	0195893R	RES 2125 CHIP 1/16W 560J TAPE
R301	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R390	0195871R	RMC73S-2A750JR
R302	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R391	0195871R	RMC73S-2A750JR
R303	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R392	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE
R304	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R393	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE
R305	0195871R	RMC73S-2A750JR	R394	0195893R	RES 2125 CHIP 1/16W 560J TAPE
R306	0195871R	RMC73S-2A750JR	R3A1	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R307	0195871R	RMC73S-2A750JR	R3A2	0195891R	RES 2125 CHIP 1/16W 470J TAPE
R308	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE	R3A3	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE
R309	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R3A4	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE
R310	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE	R3A5	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R311	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R3A6	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R312	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R3A7	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R313	0195871R	RMC73S-2A750JR	R3A8	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R314	0195871R	RMC73S-2A750JR	R3E1	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE
R315	0195871R	RMC73S-2A750JR	R3E2	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
R316	0195250R	RES 2125 CHIP 1/16W 000 TAPE	R3E3	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R317	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R3E4	0195897R	RES 2125 CHIP 1/16W 820J TAPE
R318	0195871R	RMC73S-2A750JR	R3E6	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R319	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R3E7	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R320	0195871R	RMC73S-2A750JR	R3E8	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R321	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R3F1	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE
R322	0195871R	RMC73S-2A750JR	R3F2	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R323	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R3F3	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE
R324	0195871R	RMC73S-2A750JR	R3F4	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R325	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE	R3F5	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R326	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R3F6	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R327	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R3F7	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R328	0195918R	RES 2125 CHIP 1/16W 5.6KJ TAPE	R3F8	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R329	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R3G2	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R330	0195891R	RES 2125 CHIP 1/16W 470J TAPE	R3G3	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R331	0195883R	RES 2125 CHIP 1/16W 220J TAPE	R3G4	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R332	0195891R	RES 2125 CHIP 1/16W 470J TAPE	R3G5	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R334	0195893R	RES 2125 CHIP 1/16W 560J TAPE	R601	0700049M	RES.-CARBON FLM 1/16W 4.7K-JB
R341	0195875R	RES 2125 CHIP 1/16W 100J TAPE	R602	0700061M	RES.-CARBON FLM 1/16W 33K-JB
R342	0114137M	REG.-CARBON FILM 1/4W 180-JB	R603	0700049M	RES.-CARBON FLM 1/16W 4.7K-JB

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
R604	0700065M	RES.-CARBON FLM 1/16W 68K-JB	R722	0195904R	RESISTOR 2125 CHIP 1/16W 1.5KJ TAPE
R605	0700062M	RES.-CARBON FLM 1/16W 39K-JB	R723	0195922R	RES 2125 CHIP 1/16W 8.2KJ TAPE
R611	0700062M	RES.-CARBON FLM 1/16W 39K-JB	R725	0195948R	RESISTOR MINI-CHIP RMC1/16 91K-J TAPE
R612	0113737M	RES.-CARBON FLM 1/2W 330JB	R726	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB
R613	0187104M	RES.-CARBON FLM 1/16W 43K-JB	R727	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
R614	0119722M	RES.-METAL OXIDE FILM 1.0-JB/W	R728	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R615	0119722M	RES.-METAL OXIDE FILM 1.0-JB/W	R729	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R616	AT01029S	RES.MTL FLM 1W 1.0 OHM	R749	0195879R	RES 2125 CHIP 1/16W 150J TAPE
R617	AT01083S	RES.MTL OXIDE FLM 1W 100 OHM	R751	0700034M	RES.-CARBON FLM 1/16W 330-JB
R618	0113725M	RESISTOR CARBON FILM SRD1/2P-B 100-J	R752	0700035M	RES.-CARBON FLM 1/16W 390-JB
R619	0113725M	RESISTOR CARBON FILM SRD1/2P-B 100-J	R753	0113758M	RES.-CARBON FLM 1/2W 2.2K-JB
R620	0113725M	RESISTOR CARBON FILM SRD1/2P-B 100-J	R754	AT00338S	RES.MTL OXIDE FLM 3W 180 OHM
R621	0700063M	RES.-CARBON FLM 1/16W 47K-JB	R755	AT00338S	RES.MTL OXIDE FLM 3W 180 OHM
R622	0700063M	RES.-CARBON FLM 1/16W 47K-JB	R758	0100031M	RES.-CARBON FLM 1/8W 39-JB
R631	0700027M	RES.-CARBON FLM 1/16W 100-JB	R759	AT01092S	RES.MTL OXIDE FLM 1W 220 OHM
R632	0700049M	RES.-CARBON FLM 1/16W 4.7K-JB	R760	AT01092S	RES.MTL OXIDE FLM 1W 220 OHM
R651	0700044M	RES.-CARBON FLM 1/16W 1.8K-JB	R766	0700052M	RES.-CARBON FLM 1/16W 6.8K-JB
R652	0700058M	RES.-CARBON FLM 1/16W 22K-JB	R767	0700058M	RES.-CARBON FLM 1/16W 22K-JB
R658	0100063M	RES.-CARBON FLM 1/8W 820-JB	R769	0700048M	RES.-CARBON FLM 1/16W 3.9K-JB
R659	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB	R770	0700067M	RES.-CARBON FLM 1/16W 100K-JB
R660	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB	R771	0700063M	RES.-CARBON FLM 1/16W 47K-JB
R661	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB	R772	0700063M	RES.-CARBON FLM 1/16W 47K-JB
R662	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB	R773	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R663	0700063M	RES.-CARBON FLM 1/16W 47K-JB	R775	0114181M	RESISTOR-CARBON FILM SRD 1/4 PF 6.8K-J
R664	0700054M	RES.-CARBON FLM 1/16W 10K-JB	R776	0700055M	RES.-CARBON FLM 1/16W 12K-JB
R667	0700053M	RES.-CARBON FLM 1/16W 8.2K-JB	R777	0700032M	RES.-CARBON FLM 1/16W 220-JB
R668	0700055M	RES.-CARBON FLM 1/16W 12K-JB	R778	0188122M	RES.-CARBON FLM 220-J 1/2W
R669	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB	R780	AT00332S	RES.MTL OXIDE FLM 3W 100 OHM
R670	0700063M	RES.-CARBON FLM 1/16W 47K-JB	R788	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
R671	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB	R7C1	0195250R	RES 2125 CHIP 1/16W 000 TAPE
R673	0113725M	RESISTOR CARBON FILM SRD1/2P-B 100-J	RA01	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R674	0114041M	RESISTOR-CARBON FILM SRD 1/4P 10J	RA02	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R675	AT01134S	RES.MTL OXIDE FLM 1W 8.2K OHM	RA03	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R676	0700054M	RES.-CARBON FLM 1/16W 10K-JB	RA04	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R678	0700054M	RES.-CARBON FLM 1/16W 10K-JB	RA05	0195960R	RES MINI-CHIP RMC1/16 270K-J TAPE
R681	0700045M	RES.-CARBON FLM 1/16W 2.2K-JB	RA06	0195960R	RES MINI-CHIP RMC1/16 270K-J TAPE
R701B	0113737M	RES.-CARBON FLM 1/2W 330JB	RA07	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R702	0700049M	RES.-CARBON FLM 1/16W 4.7K-JB	RA08	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R703	0700027M	RES.-CARBON FLM 1/16W 100-JB	RA09	0195960R	RES MINI-CHIP RMC1/16 270K-J TAPE
R704	0700027M	RES.-CARBON FLM 1/16W 100-JB	RA10	0195960R	RES MINI-CHIP RMC1/16 270K-J TAPE
R705	0195904R	RESISTOR 2125 CHIP 1/16W 1.5KJ TAPE	RA11	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R706	0195875R	RES 2125 CHIP 1/16W 100J TAPE	RA12	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R708	0700045M	RES.-CARBON FLM 1/16W 2.2K-JB	RA13	0195960R	RESISTOR MINI-CHIP RMC1/16 270K-J TAPE
R709	0195908R	RES.2125 CHIP 1/10W 2.2KJ TAPE	RA14	0195960R	RESISTOR MINI-CHIP RMC1/16 270K-J TAPE
R710	0195875R	RES 2125 CHIP 1/16W 100J TAPE	RA15	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R711	0100065M	RES.-CARBON FLM 1/8W 1K-JB	RA16	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R712	0196881R	RES 2125CHIP 1/10W 510-F TAPE	RA17	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R713	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB	RA18	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R714	0195875R	RES 2125 CHIP 1/16W 100J TAPE	RA19	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R715	0195875R	RES 2125 CHIP 1/16W 100J TAPE	RA20	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE
R716	0700067M	RES.-CARBON FLM 1/16W 100K-JB	RA21	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R717	0700059M	RES.-CARBON FLM 1/16W 27K-JB	RA22	0195950R	RES 2125 CHIP 1/16W 100KJ TAPE
R718	0700058M	RES.-CARBON FLM 1/16W 22K-JB	RA23	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R719	0700058M	RES.-CARBON FLM 1/16W 22K-JB	RA24	0195875R	RES 2125 CHIP 1/16W 100J TAPE
R720	0195947R	RES.2125 CHIP 1/10W 82KJ TAPE	RA25	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
R721	0195927R	RES 2125 CHIP 1/16W 12KJ TAPE	RA26	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
RC01	0195250R	RES 2125 CHIP 1/16W 000 TAPE	RH26	0700054M	RES.-CARBON FLM 1/16W 10K-JB
RC02	0195250R	RES 2125 CHIP 1/16W 000 TAPE	RH27	0700063M	RES.-CARBON FLM 1/16W 47K-JB
RC03	0195250R	RES 2125 CHIP 1/16W 000 TAPE	RH28	0700063M	RES.-CARBON FLM 1/16W 47K-JB
RF02	0700054M	RES.-CARBON FLM 1/16W 10K-JB	RH29	0700027M	RES.-CARBON FLM 1/16W 100-JB
RF03	0700063M	RES.-CARBON FLM 1/16W 47K-JB	⚠ RH31	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
RF04	0700067M	RES.-CARBON FLM 1/16W 100K-JB	⚠ RH32	0114281M	RESISTOR-CARBON FILM SRD 1/4P 100K-J
RF05	0700055M	RES.-CARBON FLM 1/16W 12K-JB	RH33	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB
RF06	0700043M	RES.-CARBON FLM 1/16W 1.5K-JB	⚠ RH34	0114281M	RESISTOR-CARBON FILM SRD 1/4P 100K-J
RF07	0700054M	RES.-CARBON FLM 1/16W 10K-JB	⚠ RH35	0119639M	RES.-MTL FLM 1/8W 22K-FB
RF08	0700042M	RES.-CARBON FLM 1/16W 1.2K-JB	⚠ RH36	0119639M	RES.-MTL FLM 1/8W 22K-FB
RF09	0700067M	RES.-CARBON FLM 1/16W 100K-JB	⚠ RH37	0119639M	RES.-MTL FLM 1/8W 22K-FB
RF10	0700056M	RES.-CARBON FLM 1/16W 15K-JB	⚠ RH38	0119625M	RES.-MTL FLM 1/8W 5.6K-FB
RF11	0700025M	RES.-CARBON FLM 1/16W 68-J	⚠ RH39	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB
RF12	0700027M	RES.-CARBON FLM 1/16W 100-JB	RH40	0700054M	RES.-CARBON FLM 1/16W 10K-JB
RF13	AT03654M	RES.MTL GRAZD FLM 1/2W 180K	⚠ RH42	0100129M	RES.-CARBON FLM 1/8W 470K-JB
RF14	AT03654M	RES.MTL GRAZD FLM 1/2W 180K	⚠ RH43	0114143M	RES.-CARBON FLM 1/4W 330-JB
RF15	AT03654M	RES.MTL GRAZD FLM 1/2W 180K	⚠ RH44	AW00208	TRIMMER RESISTOR 100KOHM 1/2W
RF16	AT03662M	RES.MTL GRAZD FLM 1/2W 560K	⚠ RH45	0119653M	RES.-MTL FLM 1/8W 82K-FB
RF17	AT03662M	RES.MTL GRAZD FLM 1/2W 560K	RH47	0700063M	RES.-CARBON FLM 1/16W 47K-JB
RF18	0700057M	RES.-CARBON FLM 1/16W 18K-JB	RH48	0179597M	RES.-MTL.GRAZED FILM 5.6M-J TAPE
RF19	0700049M	RES.-CARBON FLM 1/16W 4.7K-JB	RH49	0700043M	RES.-CARBON FLM 1/16W 1.5K-JB
RF20	0700063M	RES.-CARBON FLM 1/16W 47K-JB	RH50	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB
RF21	AT03662M	RES.MTL GRAZD FLM 1/2W 560K	RH51	0700055M	RES.-CARBON FLM 1/16W 12K-JB
RF22	AT03662M	RES.MTL GRAZD FLM 1/2W 560K	RH52	0700067M	RES.-CARBON FLM 1/16W 100K-JB
RF23	0700058M	RES.-CARBON FLM 1/16W 22K-JB	RH53	0700045M	RES.-CARBON FLM 1/16W 2.2K-JB
RF24	0700039M	RES.-CARBON FLM 1/16W 820-JB	⚠ RH54	0187088M	RES.-CARBON FLM 1/16W 9.1K-JB
RF25	AT03661M	RES.MTL GRAZD FLM 1/2W 470K	⚠ RH55	0187106M	RES.-CARBON FLM 1/16W 51K-JB
RF26	0113783M	RES.-CARBON FLM 1/2W 22K-JB	RH56	0100091M	RES.-CARBON FLM 1/8W 12K-JB
RF27	0700045M	RES.-CARBON FLM 1/16W 2.2K-JB	RH58	0113789M	RESISTOR-CARBON FILM SRD1/2P-B 39K-J
RF35	AT00361S	RES.MTL OXIDE FLM 3W 1.2K OHM	RH59	0113789M	RESISTOR-CARBON FILM SRD1/2P-B 39K-J
RF36	0188171M	RES.-CARBON FLM 1M-JB 1/2W	RH60	0700036M	RES.-CARBON FLM 1/16W 470-JB
RF40	0114163M	RES.-CARBON FLM 1/4W 1.2K-JB	RH61	0100069M	RES.-CARBON FLM 1/8W 1.5K-JB
RH01	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB	RH62	0700054M	RES.-CARBON FLM 1/16W 10K-JB
RH02	0113731M	RES.-CARBON FLM 1/2W 180-JB	RH63	0700063M	RES.-CARBON FLM 1/16W 47K-JB
RH03	0700054M	RES.-CARBON FLM 1/16W 10K-JB	RH64	0700054M	RES.-CARBON FLM 1/16W 10K-JB
RH04	0700027M	RES.-CARBON FLM 1/16W 100-JB	RH65	0700063M	RES.-CARBON FLM 1/16W 47K-JB
RH05	0700053M	RES.-CARBON FLM 1/16W 8.2K-JB	RH66	0700066M	RES.-CARBON FLM 1/16W 82K-JB
RH06	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB	RH67	0113744M	RESISTOR CARBON FILM SRD1/2P-B 560-J
RH07	0700052M	RES.-CARBON FLM 1/16W 6.8K-JB	RH68	0700054M	RES.-CARBON FLM 1/16W 10K-JB
RH08	0700054M	RES.-CARBON FLM 1/16W 10K-JB	RH70	0188171M	RES.-CARBON FLM 1M-JB 1/2W
RH09	0700051M	RES.-CARBON FLM 1/16W 5.6K-JB	RH72	0100123M	RES.-CARBON FLM 1/8W 270K-JB
RH10	0700055M	RES.-CARBON FLM 1/16W 12K-JB	⚠ RH73	0119653M	RES.-MTL FLM 1/8W 82K-FB
RH11	0700067M	RES.-CARBON FLM 1/16W 100K-JB	RH77	0700045M	RES.-CARBON FLM 1/16W 2.2K-JB
RH12	0100129M	RES.-CARBON FLM 1/8W 470K-JB	RH80	0119653M	RES.-MTL FLM 1/8W 82K-FB
RH13	0700039M	RES.-CARBON FLM 1/16W 820-JB	RK01	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB
RH14	0700062M	RES.-CARBON FLM 1/16W 39K-JB	RK02	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB
RH15	0700054M	RES.-CARBON FLM 1/16W 10K-JB	RK03	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB
RH16	0700055M	RES.-CARBON FLM 1/16W 12K-JB	RK04	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB
RH17	0700062M	RES.-CARBON FLM 1/16W 39K-JB	RK05	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB
RH18	0114057M	RESISTOR-CARBON FILM SRD 1/4 PF 47-J	RK06	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB
RH19	0188124M	RES.-CARBON FLM 1/4W 330-JB	RK07	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB
⚠ RH20	0148052	RES.-WIRE WOUND 0.68-K 3W	RK08	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB
RH22	0119732M	RES.-METAL OXIDE FILM 1.2-JB	RK09	0100057M	RES.-CARBON FLM 1/8W 470-JB
RH23	0119732M	RES.-METAL OXIDE FILM 1.2-JB	RK10	0700042M	RES.-CARBON FLM 1/16W 1.2K-JB
RH24	0100079M	RES.-CARBON FLM 1/8W 3.9K-JB	RK11	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
RH25	0114209M	RESISTOR-CARBON FILM SRD 1/4 PF 22K-J	RK12	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
RK13	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB	RN13	0700054M	RES.-CARBON FLM 1/16W 10K-JB
RK17	0700046M	RES.-CARBON FLM 1/16W 2.7K-JB	RN14	0700054M	RES.-CARBON FLM 1/16W 10K-JB
RK18	0700048M	RES.-CARBON FLM 1/16W 3.9K-JB	RN15	0700064M	RES.-CARBON FLM 1/16W 56K-JB
RK22	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB	RN16	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
RK23	0700052M	RES.-CARBON FLM 1/16W 6.8K-JB	RN17	0700056M	RES.-CARBON FLM 1/16W 15K-JB
RK24	0700043M	RES.-CARBON FLM 1/16W 1.5K-JB	RN18	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
RK25	0700063M	RES.-CARBON FLM 1/16W 47K-JB	RN19	0700063M	RES.-CARBON FLM 1/16W 47K-JB
RK26	0700063M	RES.-CARBON FLM 1/16W 47K-JB	RN20	0700063M	RES.-CARBON FLM 1/16W 47K-JB
RK27	0700054M	RES.-CARBON FLM 1/16W 10K-JB	RP01	0188165M	RES.-CARBON FLM 390K-J 1/2W
RK28	0700027M	RES.-CARBON FLM 1/16W 100-JB	RP05	AT01136S	RES.MTL OXIDE FLM 1W 10K OHM
RK29	0700027M	RES.-CARBON FLM 1/16W 100-JB	RP06	AT01136S	RES.MTL OXIDE FLM 1W 10K OHM
RK30	0700027M	RES.-CARBON FLM 1/16W 100-JB	RP07	0700038M	RES.-CARBON FLM 1/16W 680-JB
RK31	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB	RP08	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB
RK32	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB	RP09	0188104M	RES.-CARBON FLM 1/2W 10-JB
RK33	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB	RP10	AT01531S	METAL FILM RESISTOR(0.1OHM1/2W)
RK34	0700063M	RES.-CARBON FLM 1/16W 47K-JB	RP11	AT01531S	METAL FILM RESISTOR(0.1OHM1/2W)
RK35	0700063M	RES.-CARBON FLM 1/16W 47K-JB	RP12	AT01531S	METAL FILM RESISTOR(0.1OHM1/2W)
RK36	0700063M	RES.-CARBON FLM 1/16W 47K-JB	RP13	0700043M	RES.-CARBON FLM 1/16W 1.5K-JB
RK37	0700063M	RES.-CARBON FLM 1/16W 47K-JB	RP14	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB
RK38	0700063M	RES.-CARBON FLM 1/16W 47K-JB	RP15	0700054M	RES.-CARBON FLM 1/16W 10K-JB
RK39	0700063M	RES.-CARBON FLM 1/16W 47K-JB	RP16	0700023M	RES.-CARBON FLM 1/16W 47-J
RK40	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB	RP17	0700042M	RES.-CARBON FLM 1/16W 1.2K-JB
RK42	AT01549S	METAL FILM RESISTOR(2.2OHM 1W)	RP19	0700029M	RES.-CARBON FLM 1/16W 150-JB
RK43	0110229S	RES.-MTL OXIDE FLM 220-JS	RP20	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB
RK44	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB	RP21	0700055M	RES.-CARBON FLM 1/16W 12K-JB
RK46	AT01545S	METAL FILM RESISTOR(1.5OHM 1W)	RP22	0100071M	RES.-CARBON FLM 1/8W 1.8K-JB
RK47	0110225S	RES.MTL OXIDE FLM 150-JS 2W	RP23	0700049M	RES.-CARBON FLM 1/16W 4.7K-JB
RK48	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB	RP24	0700051M	RES.-CARBON FLM 1/16W 5.6K-JB
RK50	AT01549S	METAL FILM RESISTOR(2.2OHM 1W)	RP25	0700055M	RES.-CARBON FLM 1/16W 12K-JB
RK51	0110229S	RES.-MTL OXIDE FLM 220-JS	RP26	0700049M	RES.-CARBON FLM 1/16W 4.7K-JB
RK52	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB	RP27	0700049M	RES.-CARBON FLM 1/16W 4.7K-JB
RK54	AT01545S	METAL FILM RESISTOR(1.5OHM 1W)	RP28	0700054M	RES.-CARBON FLM 1/16W 10K-JB
RK55	0110225S	RES.MTL OXIDE FLM 150-JS 2W	RP29	0100047M	RES.-CARBON FLM 1/8W 180-JB
RK56	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB	RP30	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB
RK58	AT01554S	METAL FILM RESISTOR(3.3OHM 1W)	RP31	0119695M	RES.-MTL OXIDE FLM 1W 0.47-F
RK59	0110229S	RES.-MTL OXIDE FLM 220-JS	RP32	0700054M	RES.-CARBON FLM 1/16W 10K-JB
RK60	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB	RP33	0700058M	RES.-CARBON FLM 1/16W 22K-JB
RK62	AT01547S	METAL FILM RESISTOR(1.8OHM 1W)	RP34	0700063M	RES.-CARBON FLM 1/16W 47K-JB
RK63	0110225S	RES.MTL OXIDE FLM 150-JS 2W	RP35	0188156M	RES.-CARBON FLM 82K-J 1/2W
RK64	0700055M	RES.-CARBON FLM 1/16W 12K-JB	RP36	0700049M	RES.-CARBON FLM 1/16W 4.7K-JB
RK65	0700054M	RES.-CARBON FLM 1/16W 10K-JB	RP37	0100091M	RES.-CARBON FLM 1/8W 12K-JB
RK90	0700054M	RES.-CARBON FLM 1/16W 10K-JB	RP38	0188154M	RES.-CARBON FLM 1/2W 56K-JB
RK92	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB	RP39	0188154M	RES.-CARBON FLM 1/2W 56K-JB
RK99	0188103M	RES.-CARBON FLM 8.2-J 1/2W	RP40	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB
RN01	0700052M	RES.-CARBON FLM 1/16W 6.8K-JB	RP41	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB
RN02	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB	RP42	0700043M	RES.-CARBON FLM 1/16W 1.5K-JB
RN03	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB	RP43	0700045M	RES.-CARBON FLM 1/16W 2.2K-JB
RN04	0700067M	RES.-CARBON FLM 1/16W 100K-JB	RP44	0700058M	RES.-CARBON FLM 1/16W 22K-JB
RN05	0700052M	RES.-CARBON FLM 1/16W 6.8K-JB	RP45	0700058M	RES.-CARBON FLM 1/16W 22K-JB
RN06	0700054M	RES.-CARBON FLM 1/16W 10K-JB	RP46	0100091M	RES.-CARBON FLM 1/8W 12K-JB
RN07	0700051M	RES.-CARBON FLM 1/16W 5.6K-JB	RP47	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
RN08	0700044M	RES.-CARBON FLM 1/16W 1.8K-JB	RP48	0700054M	RES.-CARBON FLM 1/16W 10K-JB
RN09	0700061M	RES.-CARBON FLM 1/16W 33K-JB	RP49	0700052M	RES.-CARBON FLM 1/16W 6.8K-JB
RN10	0700057M	RES.-CARBON FLM 1/16W 18K-JB	RP50	0700063M	RES.-CARBON FLM 1/16W 47K-JB
RN11	0700058M	RES.-CARBON FLM 1/16W 22K-JB	RP52	0700054M	RES.-CARBON FLM 1/16W 10K-JB
RN12	0700051M	RES.-CARBON FLM 1/16W 5.6K-JB	⚠ RP53	0700039M	RES.-CARBON FLM 1/16W 820-JB

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION
⚠ RP54	0700043M	RES.-CARBON FLM 1/16W 1.5K-JB
RP55	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
RP57	0700032M	RES.-CARBON FLM 1/16W 220-JB
RP58	0700041M	RES.-CARBON FLM 1/16W 1.0K-JB
RP59	0700047M	RES.-CARBON FLM 1/16W 3.3K-JB
RP60	0700038M	RES.-CARBON FLM 1/16W 680-JB
RP62	0700054M	RES.-CARBON FLM 1/16W 10K-JB
RP63	0100069M	RES.-CARBON FLM 1/8W 1.5K-JB
RP64	0700054M	RES.-CARBON FLM 1/16W 10K-JB
RX39	0195935R	RES 2125 CHIP 1/16W 27K-J TAPE
RX40	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE
RX41	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RX42	0195912R	RES 2125 CHIP 1/16W 3.3KJ TAPE
RX44	0195935R	RES 2125 CHIP 1/16W 27K-J TAPE
RX45	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE
RX46	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RX47	0195912R	RES 2125 CHIP 1/16W 3.3KJ TAPE
RX49	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE
RX50	0195941R	RESISTOR 2125 CHIP 1/16W 47KJ TAPE
RX51	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RX52	0195908R	RES.2125 CHIP 1/10W 2.2KJ TAPE
RX68	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RX69	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RX75	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RX76	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RX77	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RX78	0195935R	RES 2125 CHIP 1/16W 27K-J TAPE
RX79	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
RX80	0195902R	RES 2125 CHIP 1/16W 1.2KJ TAPE
RX81	0195914R	RES 2125 CHIP 1/16W 3.9KJ TAPE
RX82	0195925R	RES 2125 CHIP 1/16W 10KJ TAPE
RX83	0195891R	RES 2125 CHIP 1/16W 470J TAPE
RX84	0195891R	RES 2125 CHIP 1/16W 470J TAPE
RX85	0195891R	RES 2125 CHIP 1/16W 470J TAPE
RX86	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RX87	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RX88	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RX89	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RX90	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RX91	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RX97	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RX98	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RX99	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
RXE1	0195908R	RES.2125 CHIP 1/10W 2.2KJ TAPE
RXE7	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RXE8	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RY01	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY03	0195916R	RESISTOR 2125 CHIP 1/16W 4.7KJ TAPE
RY04	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RY05	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY09	0195920R	RES 2125 CHIP 1/16W 6.8KJ TAPE
RY15	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY17	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
RY18	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
RY20	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RY26	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RY27	0195920R	RES 2125 CHIP 1/16W 6.8KJ TAPE
RY32	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY34	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
RY35	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
RY37	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RY39	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY40	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY41	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY43	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RY44	0195920R	RES 2125 CHIP 1/16W 6.8KJ TAPE
RY50	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY52	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
RY53	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
RY55	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RY57	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY58	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY61	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RY62	0195910R	RES.2125 CHIP 1/16W 2.7KJ TAPE
RY63	0195933R	RES.2125 CHIP 1/16W 22KJ TAPE
RY64	0195931R	RES 2125 CHIP 1/16W 18KJ TAPE
RY67	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RY69	0195887R	RES 2125 CHIP 1/16W 330J TAPE
RY70	0195893R	RES 2125 CHIP 1/16W 560J TAPE
RY71	0195893R	RES 2125 CHIP 1/16W 560J TAPE
RY72	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RY73	0195891R	RES 2125 CHIP 1/16W 470J TAPE
RY76	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY80	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RY81	0195875R	RES 2125 CHIP 1/16W 100J TAPE
RY82	0195900R	RES 2125 CHIP 1/16W 1KJ TAPE
RY83	0195862R	RES 2125 CHIP 1/16W 33J TAPE
RY90	0195927R	RES 2125 CHIP 1/16W 12KJ TAPE
RY92	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY93	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY95	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY96	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RY97	0195250R	RES 2125 CHIP 1/16W 000 TAPE
RZ98	0195875R	RES 2125 CHIP 1/16W 100J TAPE
		TRANSFORMERS
⚠ T751	2272941	HORIZ DRIVE TRANS
T752	BT01231	PT-EI30F5US-HOT(DP8X) DEF. OUTPUT
⚠ TH01	BW00633	HFL1735YP-RC 32K/2H FLYBACK TRANS.
⚠ TP91	BT01271	PT-EE49F17U-240W-TDK
		MISCELLANEOUS
EAN	2974056S	3J CONNE SEH UL1007 L=160
ED11	EY00791	PJX-LEAD-PLUGPIN
ED12	EY00791	PJX-LEAD-PLUGPIN
ED13	EY00791	PJX-LEAD-PLUGPIN
EFF	EF08451	CO-01A-A0R0-241-ORA
GF01	CJ00072R	SEMICONDUCTOR 252FB-K2M
JY01	ES00119	JACK(15PIN)
N001A	MD04671	SHIELD CASE DP85A TC-30 T=0.4

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
N001B	MD04681	SHIELD PLATE DP85A TC-30 T=0.4	PFC2	2675593	15P PLUG PIN
N010	MC00104	HEAT SINK P10 H45 19 A6063S-75	PFS	2902268	PLUG PIN SUB MINI 9P
N010N	4520883	3*12 SCREW WITH WASHER	PFT	2902251	11P PLUG PIN
N010S	9414017	SILICONE COMPOUND(G-746)	PMB	ED01597U	PLUG CP-06BP5R0VU-TBL#3,5N
N165	3734532	LEAD CLAMPER B	PMG	ED01597U	PLUG CP-06BP5R0VU-TBL#3,5N
N601	MA01112	HEAT SINK (V) DP86A A1100P-H14	PMR	ED01597U	PLUG CP-06BP5R0VU-TBL#3,5N
N602	4520883	3*12 SCREW WITH WASHER	PP1	2663821	2P SUB MINI PLUG PIN
N603	MF00371	MICA SHEET (DP86)	PQD1	ED01853	PLUG 5289-4A
N701	MA01091	POWER HEAT SINK METAL (B) 1A1100P-H14	PQD2	ED00386	PLUG 7P LOCK 2.5MM JST
N702	4520883	3*12 SCREW WITH WASHER	PQS1	ED00388	PLUG 9P LOCK 2.5MM JST
N703	KL00051	IC SPRING	PQS2	ED00387	PLUG 8P LOCK 2.5MM JST
N704	2786301	TRANSISTOR SPACER (TO-3P)	PQS4	ED01852	PLUG 5289-3A
N705	2786281	MICA SHEET	PSD1	ED01471U	PLUG 07BP1R2HUTWGP-A1
N711	NA03111	CHASSIS PWB BKT AP5 CL1 SECC20/20E	PSD1	ED01491U	CONNECTOR 07BS1R2VUTWGX-A1
N715	NA20921	CHASSIS PWB BKT AP7X L1 SECC20/20E	PSD2	ED01473U	PLUG 13BP1R2HUTWGP-A1
N721	4491082	CHASSIS PWB BKT FB2 SECC20/20E	PSD2	ED01493U	CONNECTOR 13BS1R2VUTWGX-A1
N725	NA03131	CHASSIS PWB BKT AP5 BB1 SECC20/20E	PSD3	ED01472U	PLUG 11BP1R2HUTWGP-A1
N730	4159427	3X10 SCREW WITH WASHER STEEL	PSD3	ED01492U	CONNECTOR 11BS1R2VUTWGX-A1
N740	4531761	SCREEN 3X16 TAPPING W/S-WASHER STEEL	PSD4	ED01472U	PLUG 11BP1R2HUTWGP-A1
N745	2781697	YC20A INSULATION WASHER	PSD4	ED01492U	CONNECTOR 11BS1R2VUTWGX-A1
NF01	MC00104	HEAT SINK P10 H45 19 A6063S-75	PST1	ED00516	CP-TAC-L20P-A1
NF02	4520883	3*12 SCREW WITH WASHER	PST1	ED00576	CP-TAC-L20X-A1
NH01	MA01081	POWER HEAT SINK METAL (A) 1 A1100P-H14	PST2	ED00516	CP-TAC-L20P-A1
NH02	4520883	3*12 SCREW WITH WASHER	PST2	ED00576	CP-TAC-L20X-A1
NH03	KL00051	IC SPRING	PST3	ED00516	CP-TAC-L20P-A1
NH11	NT00981	FBT HOLDER AP74 PS(HI=100%)	PST3	ED00576	CP-TAC-L20X-A1
NH12	4519505	3*16 B-TITE SCREW	PSU1	ED00576	CP-TAC-L20X-A1
NI3F	3446473	HEATSINK H30 P10	PSU2	ED00576	CP-TAC-L20X-A1
NI3N	4520883	3*12 SCREW WITH WASHER	PSZ1	ED00516	CP-TAC-L20P-A1
NK01	3446473	HEATSINK H30 P10	PSZ1	ED00576	CP-TAC-L20X-A1
NK02	3446473	HEATSINK H30 P10	PSZ2	ED00516	CP-TAC-L20P-A1
NK03	4520883	3*12 SCREW WITH WASHER	PSZ2	ED00576	CP-TAC-L20X-A1
NK04	4520883	3*12 SCREW WITH WASHER	PYC1	ED01783	PLUG 23P-HQM-1
NK05	MC00193	CONV. HEAT SINK L=60 DP85 A6063S-T5	PYC2	ED01783	PLUG 23P-HQM-1
NK06	4520885	3*16 SCREW WITH WASHER	PZC	2902247	PLUG PIN SUB MINI 8P
NK07	4531761	SCREEN 3X16 TAPPING W/S-WASHER STEEL	PZV	2902243	PLUG PIN SUB MINI 4P
NK08	NA20781	CONV. IC SUPPORT BKT AP74 SECC20/20E	SK01	FE00061	1P TACT SWITCH
NP9A	MA01071	HEAT SINK DP85 (C) A1100P-H14	U002	HC00311	TUNER UNIT V6-A30FT MAIN TUNER
NPIN	4520883	3*12 SCREW WITH WASHER	U003	2429691	TUNER V8-A68FT PiP TUNER
NQ1F	3446473	HEATSINK H30 P10	U004	CS00192	3DYC-PINP UNIT ASY(HC3152)
NQ1N	4520883	3*12 SCREW WITH WASHER	U006	CS00185	FLEX CONT.UNIT ASY(HC5125)
PCB	2903544	4P PLUG PIN WITH BASE	UKDG	CS00224	DCU P.W.B. (HC2114)
PCCD	2675282	PLUG 3P	WJ01	9374575	UL CSA1007-24HP CODE GREEN
PCCD	2959052	PIN POST (PH 3P)	X001	2163971	CERAMIC FILTER 4MHZ
PCG	2903544	4P PLUG PIN WITH BASE	X701	2786681	CERAMIC OSCILLATOR 500KHZ
PCR	2903544	4P PLUG PIN WITH BASE	Z	9449602	ADHESIVE TAPE(NITTOH NO.747 W6)
PDC1	ED00384	PLUG 5P LOCK 2.5MM JST	Z	9451104	VARNISH CLOTH TUBE 0.8X1.8 YELLOW
PDD1	ED00198	10P CONNECTOR WITH LOCK	ZNS1	9414017	SILICONE COMPOUND(G-746)
PDD1	2675588	10P PLUG PIN	ZP57	9563445	EXCEED GLASS TUBE HG-2E 3.5
PDD2	ED00198	10P CONNECTOR WITH LOCK	ZP9A	9449545	NITTO TAPE NO.5 W20 (BLACK)
PDD2	2675588	10P PLUG PIN			
PDF	ED01596U	PLUG CP-04BP5R0VU-TBL#2,3N			
PDG	ED00572	CP-TAC-L15X-A1			
PDS	ED00576	CP-TAC-L20X-A1			
PDS1	2959062	PIN POST (PH 12P)			
PFC1	2675593	15P PLUG PIN			

53SDX89BA/60SDX88BA

Quick Reference Parts List

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
⚠ E992	AZ00109M	RAW B+ PROTECTOR		KR01162	53" SCREEN ASSY.
⚠ E993	AZ00108M	6.3 V HEATER PROTECTOR		H312184	53" SCREEN JIG HD MODE
⚠ E994	AZ00109M	24 V PROTECTOR		H310359	53" SCREEN JIG NORMAL
⚠ E994	AZ00109M	F/R AUDIO B+ PROTECTOR		KR01291	53" ULTRA SHIELD
⚠ E995	AZ00109M	CENTER AUDIO B+ PROTECTOR		UE04516	60" BLUE CRT ASSY.
⚠ E995	AZ00109M	-13 V PROTECTOR		UE04515	60" GREEN CRT ASSY.
⚠ E996	AZ00108M	33V PROTECTOR		KS00163	60" MIRROR ASSY.
⚠ E998	AZ00101M	24.5 V POWER FAIL PROT.		UE04514	60" RED CRT ASSY.
⚠ E999	AZ00108M	-7 V PROTECTOR		KR00631	60" SCREEN ASSY.
⚠ EP91	AZ00109M	RAW 150V PROTECTOR		H312181	60" SCREEN JIG HD MODE
⚠ EP92	AZ00107M	220 V PROTECTOR		H310355	60" SCREEN JIG NORMAL
⚠ EP96	AZ00109M	28 V PROTECTOR		HP00341	ANTENNA SWITCH
⚠ EP97	AZ00104M	-28 V PROTECTOR		HL00715	CLU-615MP R/CONTROL
⚠ F901	2722359	MAIN FUSE 6 AMP		CS00222	DCU ASSEMBLY
HM01	CZ00522	R/C INFRARED RECEIVER		CS00185	FLEX CONVERTER ASSY.
I001	CP06343U	MAIN MICROPROCESSOR		AZ00005	FOCUS PACK ASSY
I002	CP05272U	EEPROM IC		CALL TS	MAIN CHASSIS
I003	CP05261U	DAC (Expander) IC	U002	HC00311	MAIN TUNER
I008	CP05571	RGB PROCESSOR	U003	2429691	PIP TUNER
I301	CP00742U	A/V SELECTOR			
I302	CP05572	9 V REGULATOR			
I304	CW00022	COMB FILTER			
I401	2004751	FRONT AUDIO OUTPUT			
I402	2004751	CENTER AUDIO OUTPUT			
I403	2004751	REAR AUDIO OUTPUT			
I601	CZ00761U	VERTICAL OUTPUT			
I651	2365452	SIDE PIN COMPARATOR			
I701	CP05571	HORIZ. VCC REGULATOR			
I702	CZ00751U	HOIRIZ. & VERT. DRIVE IC			
I703	CP00401	VERTICAL PARABOLA COMP.			
⚠ I901	CZ00451	SWITCHING REGULATOR			
⚠ I904	2000465	REG. FB PHOTO-COUPLER			
⚠ I905	2000465	SHUTDOWN PHOTO COUPLER			
⚠ I906	2000465	AC CLOCK PHOTO COUPLER			
I908	CP03923F	TV-9V REGULATOR			
I909	CP03922F	TV-5V REGULATOR			
I910	CP03921F	3.3 V REGULATOR			
I911	CP03921F	D3.3 V REGULATOR			
I914	CP03922F	TV-5 V REGULATOR			
IK01	CP00571	5 V REGULATOR FOR DCU			
IK03	CP00571	5 V REG. FOR SRAM DCU			
IK04	CZ00431	CONV. OUT (RH,RV, & GV)			
IK05	CZ00431	CONV. OUT (GH, BH & BV)			
IX01	CP04712U	RAIN FOREST IC			
Q001	2312171	5 V REGULATOR			
Q007	2325691R	ON-OFF RELAY DRIVER			
⚠ Q777	2314002F	DEFLECTION OUTPUT			
⚠ QH01	2390851	H.V. OUTPUT			
⚠ T752	BT01231	DEFLECTION OUTPUT TRANSF.			
⚠ TH01	BW00633	FLYBACK TRANSFORMER			
	CS00192	3DYC COMB F./ PIP UNIT			
	BY01221	53" & 60" YOKE ASSY.			
	EU04513	53" BLUE CRT ASSY.			
	UE04512	53" GREEN CRT ASSY.			
	KS02021	53" MIRROR ASSY.			
	UE04511	53" RED CRT ASSY.			

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